DOCUMENT RESUME

ED 292 287 EC 202 070

AUTHOR	Revelj, Elizabeth O.
TITLE	Improving Learning Skills of Minimally Handicapped Preschoolers Using Sensorimotor Integration Therapy.
PUB DATE	87
NOTE	160p.; Ed.D. Practicum II Report, Nova University. Some pages of appendices will not reproduce.
PUB TYPE	Information Analyses (070) -- Dissertations/Theses - Practicum Papers (043)
EDRS PRICE	MF01/PC07 Plus Postage.
DESCRIPTORS	Educational Objectives; *Handicap Identification; Inservice Teacher Education; *Learning Disabilities; *Minimal Brain Dysfunction; *Outcomes of Education; Parent Education; *Perceptual Motor Learning; Preschool Education; Remedial Programs; *Sensory Integration; Student Evaluation
IDENTIFIERS	*Early Intervention

ABSTRACT

An 18-week demonstration, remediation project was undertaken to improve educational effectiveness for 14 preschoolers with minimal cerebral dysfunction. A literature search indicated that these children can be appropriately educationally programmed for their sensorimotor problems and suggested that such early intervention can prevent later academic learning disabilities. Specific goals included: (1) providing an objective, easily administered assessment tool to preschool educators and therapists at special centers; (2) providing information and support regarding appropriate intervention methods and principles; (3) educating parents and staff about characteristics and problems associated with preacademic learning problems; (4) establishing an early intervention program for preschoolers with learning disabilities; and (5) assessing the effectiveness of the learning disabilities prevention program. Sensorimotor integration theory and methods were used for assessment and remediation. Of the 14 participating children, 12 demonstrated improved performance on the posttest and 6 increased their level of competence to within normal ranges as tested by the Miller Assessment for Preschoolers. Of the 15 participating educators and therapists, 14 demonstrated increased knowledge of preacademic learning disabilities on a posttest. The staff at both target preschools participated fully in the implementation and are continuing the evaluation and remediation program as established by the practicum. (Author/VW)

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Improving Learning Skills of Minimally Handicapped Preschoolers Using Sensorimotor Integration Therapy

by

Elizabeth O. Revelj

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NOVA UNIVERSITY

Improving Learning Skills of Minimally Handicapped Preschoolers Using Sensorimotor Integration Therapy

by

Elizabeth O. Revelj

Cluster XVIII

A Practicum II Report Presented to the Ed.D. Program
in Early and Middle Childhood
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Education

NOVA UNIVERSITY

1987

This practicum took place as described.

Verifier: Joanne Pfeil-Montasser (signature)
Joanne Pfeil-Montasser

Director of Developmental Training Programs
Ann Storck Center
Title

1790 S.W. 43rd Way, Ft. Lauderdale, Fl. 33317
Address

July 14, 1987
Date

This practicum report was submitted by Elizabeth O. Revelj under the direction of the adviser listed below. It was submitted to the Ed.D. Program in Early and Middle Childhood and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Nova University.

Approved:

8/13/87
Date of Final
Approval of Report

JoEllen Salce Rogers (signature)
JoEllen Salce Rogers, Ph.D.

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Improving Learning Skills of Minimally Handicapped Preschoolers Using Sensorimotor Integration Therapy. Revelj, Elizabeth O., 1987: Practicum Report, Nova University Ed.D. Program in Early and Middle Childhood.

Descriptors: Preschool Children / Minimal Cerebral Dysfunction / Learning Disabilities / Sensory Integration / Handicap Identification / Learning Readiness / Perceptual Motor Learning.

A demonstration, remediation project occurred during the 1986-87 school term to improve educational effectiveness for preschoolers with minimal cerebral dysfunction. A literature search indicated that these children can be appropriately educationally programmed for their sensorimotor problems and suggested that such early intervention can prevent later academic learning disabilities. The author's primary goal was to facilitate appropriate evaluation and remediation of preschoolers in the target county, identified as "at risk for developmental disabilities." The specific goals were: (a) to provide an objective, easily administered assessment tool to preschool educators and therapists at special centers; (b) to provide information and support regarding appropriate intervention methods and principles to preschool educators and therapists; (c) to educate preschool parents and staff about the characteristics and problems associated with preacademic learning problems; (d) to establish a program for early intervention for preschoolers with learning disabilities at one, and possibly two special centers; (3) to assess the effectiveness of the learning disabilities prevention program by reevaluation and follow-up of participant children. Sensorimotor integration theory and methods were used for assessment and remediation.

Of the 14 children assessed and remediated for developmental learning deficiencies during the 18 week intervention period, 12 demonstrated improved performance on the posttest. Six of the 14 children increased their level of competence to within a normal range as tested by the Miller Assessment for Preschoolers (MAP). Nine of the 14 preschoolers had experienced perinatal medical complications and had been identified as "at risk" at that time. Fourteen of the 15 involved educators and therapists demonstrated increased knowledge of preacademic learning disabilities assessed by a posttest. The staff at both target preschools participated fully in the

implementation and are continuing the evaluation and remediation program as established by this practicum.

CHAPTER I

INTRODUCTION

Description of Community, Including Socio-Economic and Geographic Factors

The county, located on the southeast coast of Florida, is one of the fastest growing metropolitan areas in the nation, with a current population of 1,200,000. According to 1984 census figures, the largest of 28 municipalities within the county, with a population of 152,053, is the seat of the county government, which is composed of a board of elected county commissioners and a full-time county administrator. Another much smaller municipality (37,692 people), is the southernmost city in the county and, like the county seat, is a self-governing city, with an elected commission city manager form of government.

The county is approximately 32 miles long and 40 miles wide with some 165 miles of navigable waterways, 10 percent of the total area. Nearly two thirds of the county's western, inland portion is set aside as a natural environment, South Florida Water Management District, and borders Everglades National Park. The area boasts an average year-round temperature of 75.5 degrees and more than 3000 hours per year of sunshine. This subtropical marine climate draws more than 3 million visitors every year, who contribute substantially to the economic well-being of the county. In addition to tourism, local industry includes interstate banking, international trade, sports, retailing, construction, agriculture, and high-technology. The county also contains the deepest seaport south of Norfolk, Virginia, which contributes heavily to tourist and industrial revenues as reported by the Chamber of Commerce (1985).

The county has adequate medical and educational facilities to meet its needs with 20 general hospitals, at least 8 home health agencies, and the largest fully accredited school system in the country. The school system includes 10 centers for handicapped or special needs students between the ages of 5 and 21 years. Educational programs for younger handicapped children are provided by private schools. There are five private, agencies in the county serving the educational needs of children with disabilities who are 0 to 5 years old. They are all partially funded by the Florida Department of Health and Rehabilitative Services through money federally mandated by PL 94-142, Education for All Handicapped Children Act of 1975. One such center, providing special education for the 0-to 5 year old population, is part of the local chapter of a national organization serving the needs of retarded citizens. It is located in the southernmost city in the county. A second smaller, private agency, which is located in the largest city, provides preschool education for approximately 24 handicapped children.

Author's Work Setting, Role, and Responsibilities

The author is a licensed physical therapist, who has a small private practice in this county. She has over 28 years of clinical physical therapy experience and 8 1/2 years of teaching experience, which includes both elementary special education classroom assignments and university undergraduate and graduate teaching positions. Academic degrees include a Bachelor of Science degree in physical therapy, a Master of Arts degree in special education, and advanced certification in treatment of neurologically impaired children. As part of the private practice, the author has provided physical therapy services to the private center's preschool (ASCP) for the past 6 years and to the local affiliate of the national association's Parent Training/Early Intervention Program (PT/EIP) for the past 3 1/2 years. Both contracts provide for direct evaluation and treatment and indirect consulting services for the staff and families of the children. Significant indirect service time involves teaching parents and staff techniques of physical management and exercise of the children during the daily activities. The state Department of Health and Rehabilitative Services/Developmental Services Program Office is the referral source for both agencies.

The ASCP serves 30 students, who attend one of three classes. Each class has one teacher and two to three aides, plus daily volunteers and periodic student teacher interns. One additional special educator administrates and supervises the programs. The preschool is one unit of the center, a multiunit facility providing both day and residential programs for developmentally delayed children and adults. Nursing, social, and psychological services as well as physical, occupational, and speech therapies are provided to all clients. All teachers and other professionals have at least a college degree or comparable work and continuing education experience with preschool exceptional children.

The PT/EIP is one component of the local agency of a national association for retarded citizens. The local agency also includes residential, preschool and workshop facilities. The PT/EIP supports, assists, and trains parents of handicapped children. Intervention, according to their brochure (1984), includes "an in-depth evaluation of the child, a comprehensive training program for the parent, regularly scheduled home visits to teach stimulation techniques, referral services and supportive counseling for parents and siblings." The parent training utilizes behavior modification techniques and the Portage Model curriculum for development, as described by Cartwright (1981). Between 80 and 90 families are serviced by two behavior specialists, three parent trainers, one social worker, and one physical therapist. All service providers are required to have at least a bachelor's degree.

The author provides physical therapy gross motor programming for 26 children at the ASCP and direct regular therapy treatments to twenty children at the PT/EIP.

CHAPTER II

STUDY OF THE PROBLEM

Description of Problem Situation

There has been a lack of appropriate evaluation and remediation of preschool children with minimal cerebral deficits in the target county. This only mirrored a national problem. When left unattended, these neurologic deficits, which manifest as mild coordination, attention, sensory input, and cognitive processing problems, interfere with learning and contribute to later academic learning disabilities and school failure. Cerebral deficits usually result from perinatal medical difficulties and place a child in the "at risk" category for developing developmental disabilities. This "at risk" category is used by the state Health and Rehabilitative Services (HRS) for all potentially handicapped children up to 2 years old and most of those up to 5 years old as suggested by the Pre K Study Panel (1984). This state classification system is compatible with the final rules and regulations of PL 94-142 as mandated by the U.S. Office of Education (1977). When so identified, a child is referred to one of five agencies who contract with HRS to provide evaluation and early intervention services. A referred child with moderate to severe observable disabilities has been appropriately evaluated and educationally programmed in at least two of the agencies with which the author is associated. After objective, comprehensive evaluations by each therapist and teacher, an individual education program plan has been developed and instructed to all classroom personnel and teachers. However, until recently neither an objective evaluation instrument nor appropriate intervention strategy knowledge was readily available for use with a referred child who demonstrated only mild disabilities. Thus, if a child tested within normal limits on developmental milestones and demonstrated no major physical or sensorimotor problems, the parent was often advised to seek a regular rather than special preschool experience for his/her child. Therefore, these children received inappropriate or no early intervention in this county. Many of these children who tested "normal" had been referred to the special center because of perinatal or infancy medical problems. These children continued to be at risk for developing learning disabilities when they reached school age and a discrepancy between their actual and potential intellectual achievements could be established, as Blackman, Lindgren, Harper, Hein and Healey (1986) demonstrated recently. There has been found to be a strong positive correlation between early perinatal problems, sensorimotor integration problems, and later inadequate academic performance. Recent studies have shown that very early factors and neurological characteristics predispose a child to later learning disabilities. As Hertzig (1981), Fuller, Guthrie, and Alvord (1983), Ayres (1979), and Gillberg and Rasmussen (1982) all pointed out, children who are labeled learning disabled in school could have been identified much earlier by neurological examination, sensorimotor performance, behavioral observations and/or perinatal and family history. Hertzig examined neurologically sixty-six 8-year-olds who had been premature and low birth weight. Thirteen of the children had localizing neurological lesions and twenty others were found to have two or more "soft signs" of cerebral dysfunction, such as motor incoordination, balance problems, sensory perceptual problems, and muscle tone abnormalities. Those 33 children were significantly more likely to have received special education and psychiatric referrals than the children who tested neurologically normal. She contrasted this with her previous study of normal eight-year-old children in which only 5 percent exhibited two or more neurological "soft signs." Fuller et al. cited a considerable body of evidence that premature children show a higher incidence of later neurological, intellectual, and/or behavioral developmental problems. Their study identified neuropathological areas in certain cortical components which they felt were precursors of later learning disability and minimal brain dysfunction syndromes. Their subjects were 16 premature infants who died later.

Ayres (1979) outlined the developmental sequence of sensorimotor processes and integration. She stressed the prenatal onset and gradual, predictable, increasingly complicated nature of the child's methods for taking in sensory input, processing the information, and acting effectively on his environment. This sensorimotor processing sequence matures until the child is between 8 and 10 years old and his central nervous system (CNS) is mature and well integrated. Ayres described early behavioral and sensorimotor symptoms of CNS integration problems and stressed early intervention to prevent later academic problems. McKinney and Fragans (1983) also stated that prevention of academic disabilities is dependent on early intervention to assist preschool children to efficiently select and use learning styles and develop appropriate social and cognitive behaviors enabling them to maximize use of their intellectual abilities.

Previously, evaluators have not had a testing instrument which was objective, precise, and definitive to identify preschool children with preacademic problems. DeGangi and Berk (1983) reported on a test which they were developing for preschoolers with minimal sensorimotor difficulties. Slaton (1985) described another new evaluation tool for identifying objectively preschool children with preacademic or school-related problems. The Miller Assessment for Preschoolers (MAP) is easily administered and scored and has been standardized by testing 1,200 children in the United States, according to Slaton (1985). The author discussed the studies establishing the reliability and the validity of the MAP, the clinical and research implications, and the previous lack of an objective measure for evaluating this population of children. She recommended the instrument as a most valuable tool for identifying children with preacademic or school-related problems. The MAP manual contains specific instructions for administering and scoring 27 "core" items which are sensorimotor in nature and are considered by Miller (1982) as basic prerequisites for academic learning and successful school performance. She anticipated that early identification and remediation of these existing problems would help alleviate potential primary school difficulties. It is an exciting prospect that some children's failure experiences, inadequacy feelings, learning frustrations, and disability labeling can be prevented by early identification and remediation of preacademic learning disabilities. Prevention programs have been well documented to be the most cost-effective method of problem correction, as substantiated by Will (1986). However, new evaluation tools, such as the Miller Assessment for Preschoolers (MAP) and the DeGangi and Berk test, were only recently publicized and had not yet been employed in any of the five agencies in the county despite reported ease of administration and scoring. From the author's review of the literature and discussions with other preschool educators and therapists, she concluded that this was a global problem of inadequate services for these children with brain dysfunction and mild sensorimotor deficits. If the problem were rectified, all children in "developmental risk" but with no manifest sensorimotor problems at the preschool level would be tested for sensorimotor integration deficits. All children who exhibit sensorimotor integration abnormalities would receive appropriate intervention during the preschool years. Hopefully, learning disability problems would be prevented from developing during the grade school years for these children. Briefly stated, the problem was the lack of evaluation and remediation for preschool children with minor cerebral deficits, which manifest as mild sensorimotor problems and develop into learning disabilities.

Documentation of the Problem

Evidence for the existence of this problem was documented in several ways. Service data from the ASCP for both the 1984-85 and 1985-86 school years revealed that 5 of the 20 enrolled children both years did not receive physical therapy services because they had achieved adequate sensorimotor function on the available test of motor performance. Several children were not admitted into the program because they did not show two or more significant developmental delays - the criterion used for admission. In fact, the admission assessment tool used was simply not discreet enough to objectively identify mild sensorimotor problems. Yet these mildly involved children were the most capable of being normalized into the education mainstream, according to McKinney and Fragans (1983). The PT/EIP service data from the 1985-86 year indicated similar statistics. At least 4 of the approximately 18 evaluations done by the physical therapist revealed minor sensorimotor problems, behavioral problems such as hyperactivity and/or inattentiveness, and questionable soft neurologic signs, but age-level motor developmental milestone achievement and no frank neurological, physical or orthopedic abnormalities. Physical therapy intervention, therefore, was not indicated but all the parents were given suggested gross motor games for improving coordination, motor planning, and impulse controls to do at home.

During the 1986 school year the author received four requests for presentations to preschool personnel about sensorimotor programming for the mildly involved child. In addition several teachers, parents, and other therapists had requested written information, to more adequately remediate their mildly handicapped preschoolers. (This service lack is elaborated in some of the letters in Appendix A.) In a final report following an in-depth study of services to prekindergarten handicapped students in this state (Pre K Study Panel, 1984), a full continuum of services was found lacking and was recommended for young children.

In her keynote address at a recent national conference, Madeleine C. Will (1986), Assistant Secretary for the Office of Special Education and Rehabilitation Services, U.S. Department of Education, made the following observation:

> "Yet another consequence of the way we think and go about educating students with learning problems is that special programs frequently address failure rather than prevention. The current practice in education is to make special programs available to children and youth with learning problems after serious learning deficiencies are identified - deficiencies which could possibly have been ameliorated with early intervention. Under present special education rules, monies and programs are authorized for students with learning problems only when these youngsters have demonstrably failed and have been evaluated as 'seriously emotionally disturbed' or 'learning disabled.' Professionals who could held correct incipient problems during the early developmental stages are prevented from doing so by lack of authorization. The services of these professionals must be withheld until the problems are severe enough for the child to be qualified for one or more special programs."

The means to evaluate objectively and program adequately preschool children with minimal cerebral deficits were available as documented by Miller (1982), Slaton (1985), Connolly (1984), Ayres (1979), and others. It was decided that early intervention professionals of our county must learn about and begin using the new, more precise assessment and remediation procedures. Only then will we provide quality early educational intervention for all children.

Analysis of the Causes

Certainly a major cause of the inadequate service provided to preschool children with minimal cerebral deficits was the lack of an objective, standardized assessment tool for testing preacademic difficulties at the preschool level. A number of standardized diagnostic tests for identifying learning disabilities in older children had been available for some years. The Southern California Sensory Integration Tests, Bruininks-Oseretsky Test of Motor Proficiency, Purdue Perceptual Motor Survey, Frostig Movement Skills Test Battery, and Bender Gestalt Test for Young Children all evaluated children over 5 years of age according to Cermak and Henderson (1985). The tests for older children concentrated on academic skills and mature, integrated movement patterns rather than preacademic skills and simpler movement responses to one or two sensory stimuli. Historically younger children with mild sensorimotor impairments were assessed by subjective "clinical observations" by an early childhood professional. Only in recent years were there several attempts to develop and publicize objective tests specifically designed for preschool preacademic deficits. DeGangi and Berk (1983) developed a test to measure sensory integrative function in children 3 to 5 years of age. Miller (1982) also developed an objective assessment to evaluate chidlren from 2 years 9 months to 5 years 8 months with mild to moderate preacademic problems. The MAP was more widely publicized and made readily available and easy to administer. Therefore, despite attempts to rectify the situation, the lack of objective identification methods had been a major cause of lack of early remediation for preacademic problems. Clearly, if the children were not identified early they were not remediated early. As development proceeded on an inadequate sensorimotor foundation, the problems compounded and increased until the child experienced profound academic failures and frustrations in school.

A second cause of inadequate remediation provided to young children with preacademic difficulties, i.e., learning disabilities. was the inappropriateness of definitions used to describe the problem. Traditionally definitions focused on a discrepant measure between the child's estimated academic potential and actual school achievement. This discrepancy was the procedural method of identification according to the U.S. Office of Education, HEW (1977). However, the currently accepted definition and the one used in the law by the U.S. Office of Education, HEW, is:

> "...means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain disfunction, dyslexia, and developmental aphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing, or motor handicaps, of mental retardation, or of environmental, cultural or economic disadvantage."

Unfortunately, both of these definitions were directed at primary school academic performance, not at the skills and sensorimotor performance of younger children. To compound the problem, each discipline which focused on these children described the problem according to its own frame of reference. Thus Getman, an optometrist, focused on the role of visual perception; Kephart and Cratty, educators, advocated perceptual motor training; Ayres, a rehabilitation specialist, focused on a developmental sensorimotor basis; Prechtl and Touwen, neurologists, studied the underlying neurology; and Feingold, a nutrition specialist, advocated diet control. These professionals and their positions and theories were described by both Connolly (1984) and Cermak and Henderson (1985). The multidisciplinary involvement led to fragmentation and confusion in both identifying and treating the preschool children and their preacademic discrepancies. Consequently, very little effort was directed at identification of precursors and prediagnostic remediation, i.e., prevention of learning academic problems. This led to a third cause of the problem.

There was a lack of concrete research evidence linking perinatal medical problems to sensorimotor integration deficits and to academic learning disabilities. However, recent studies demonstrated a strong positive correlation between all three of these factors. A longitudinal, comprehensive study by Gillberg (1985), following 141 learning disabled children, established a basis of developmental changes of the behavioral manifestations of some of the characteristics of learning disability. This set the precedence for other correlative and causative studies by Astbury, Orgill & Bajuk (1987); Hadders-Algra, Touwen, & Huisjes (1986); Wolff, Gunnoe & Cohen (1985); Campbell and Wilhelm (1985). Ample justification existed therefore for preacademic intervention for early correlational, perhaps causative, factors of learning disabilities.

One final cause of this problem was the lack of knowledge by preschool professionals and parents regarding their ability to address and the importance of addressing the needs of this population of preschoolers. A perusal of recent texts of early childhood education, such as by Jordan, Hayden, Karnes, and Wood (1977), as well as of pediatric medical treatment for learning disabilities, such as Connolly (1984) and Cermak and Henderson (1985), revealed no mention of preschool-level involvement. In fact, a relatively recent educational text by Cleland and Swartz (1982) made the following statement: "In attempting to determine the age at which L.D. becomes manifest, we can indicate that the L.D. problem starts as early as the first grade." Is it any wonder preschool professionals and parents did not recognize a need for early intervention? Too often they attributed such learning disability soft signs as incoordination, motor clumsiness, sequencing and memory problems, hyperactivity, and disdiadochokinesia to laziness, clumsiness, behavior problems, or retardation. Although the positive relationship between early intervention and prevention of learning disabilities in primary school was still being substantiated by research demonstration projects, an expectation of success was indicated. This type of early intervention must be advocated and practiced to effectively serve our children with minor cerebral deficits.

Relationship of the Problem to the Literature

Brief Overview and Current Remediation

Connolly (1984), Cermak and Henderson (1985), and Cleland and Swartz (1982) all provided a comprehensive overview of learning disabilities including the federally mandated and generally accepted definition, incidence, and behavioral characteristics of children with learning disabilities. As defined, "learning disabilities" include such conditions as perceptual handicaps, minimal brain dysfunction, brain injury, and developmental aphasia, which implies occurrence in early childhood. However, as outlined by the U.S. Office of Education, HEW (1977), children with these disorders typically were not identified until they were of school age, when there was a discrepancy between actual achievement and intellectual ability. The many definitional categories which are grouped under the heading of learning disabilities are reflective of the many disciplines involved, thus each describes the child according to his own discipline. However, there is agreement that it is a heterogeneous group of children who are so labeled, with each one showing some or many of a common list of symptoms. The most universally occurring ones are attention deficits, motor/perception dysfunction, memory problems, soft neurologic signs, delayed speech, and variant physical development. A significant percentage of grade school children are learning disabled. Reported incidences were as high as 28 percent according to both Connolly (1984) and Cleland and Swartz (1982). Theories of causation vary widely, but there continues to be general agreement that there is no single cause of such divergent disabilities. However, mounting research evidence lends considerably more credence to biological rather than psychosocial factors, and primary focus increasingly is on neuropathology and neuroimmaturity as the basic underlying abnormalities. Therefore, remediation now focuses, even in grade school and older children, on correcting and/or preventing the underlying physiological and/or sensorimotor factors which are the prerequisites for academic learning rather than simply tutoring the academic area of deficiency. Therefore, when a child is identified as learning disabled by his teacher, he/she is referred for all appropriate "related services" to which he/she is entitled by the U.S. Office of Education, HEW (1977) mandate. Sensorimotor deficiencies usually are identified and remediated by the therapists and/or special educators at that time. Connolly (1984) and Cermak and Henderson (1985) stressed the need for multidisciplinary evaluation, intervention and communication between classroom teacher, special educator, adaptive physical educator and all the involved therapists. In addition, Connolly (1984), Ayres (1979), and Miller (1982) stressed the need for therapists to communicate the established relationship between improved sensorimotor integration and academic improvements to both parents and educators.

All the models, treatment theories, and recommended intervention procedures discussed and/or recommended by Cermak and Henderson (1985), Connolly (1984), Ayres (1979), and Cratty (1970) emphasized identification and training of deficit cognitive, perceptual, attentional, and/or motor skills as a preparation for learning academic material. Simply said, one should assist the child's ability to take in, sort out, and connect information from the external world and then to act appropriately and efficiently on the environment. Clearly this is a preprequisite, if not a cause, for academic achievement.

If the remediation of learning disabilities involves treatment of deficiencies which are prerequisites to school, as proposed in the cited literature, one should test for and address the problem areas before the child is school age. Only recently has attention been focused on early intervention for prevention of learning disabilities in school.

Preschool Identification and Prevention

The focus toward preschool remediation for learning disabilities was delayed until the past several years because of several factors: (a) questionable outcome of previous programs, (b) lack of definitive, identifiable characteristics of learning disabilities, (c) lack of identified early precursors to the academic problems, and (d) lack of appropriate evaluation instruments and remediation procedures.

Although Keogh and Sbordone (1974), Shipe and Miezitis (1969), and Gubbay (1978) all advocated early identification and remediation, the results of their intervention were subjective, equivocal and inconclusive. All the reported strategies resulted in improvement in function to some extent but could not be compared, rated, or related to the mechanism of identification.

Interestingly, Keogh and Sbordone (1974), Becker and Snider (1979), and Glazzard (1979) all found that kindergarten and preschool teachers could accurately, albeit subjectively, predict which children would later be identified as learning disabled. Ottenbacher (1982) examined 49 studies of early intervention programs and found that 8 met his criteria of objective studies of intervention outcomes. Results revealed that learning disabled children who participated in sensory integration therapy performed significantly better than those who did not.

In addition to teachers' subjective impressions, other differences were reported which distinguish the child who has or will develop learning disabilities. Electroencephalogram differences (Lubar, Bianchini, Calhoun, Lambert, Brody, & Shabsin, 1985). lateralization and dominance characteristics (Obrzut & Boliek, 1986; Connolly, 1983), deficient interhemispheric transfer difficulties (Vellutino, Bentley & Phillips, 1978; Cermak & Ayres, 1984; Stilwell, 1981), and differences in postural reactions (Stilwell & Heiniger, 1983) had all been studies. Correlations were established also between learning disability and difficult temperament (Carey, McDevitt, & Baker, 1979), articulation disorders (Cermak, Ward, & Ward, 1986), delayed bone age (Schlager, Newman, Dunn, Crichton, & Schulzer, 1979), abnormal head circumference (Smith, 1981), and poor motor coordination (Cornish, 1980; Kendrick & Hanten, 1980). There continues to be a considerable body of evidence linking inadequate vestibular system function to learning disability problems as reported by Ayres (1978), Steinberg and Rendle-Short (1977), Ottenbacher (1983), and Dutton (1985). Palatajko (1985) felt that vestibular manifestations were in fact manifestations of cortical dysfunction and should be regarded rather as neurological soft signs.

All of these reported characteristics which differentiated children with learning disabilities are physical and biological factors, and the vast majority could be interpreted to indicate nervous system dysfunction. The presence of soft signs, i.e., symptoms of minor cerebral deficits, has been the most frequently documented characteristic of learning disabilities. These factors, including motor incoordination, attention deficits, perceptual problems, and behavioral problems are considered basic to the diagnostic determination according to Gubbary (1978), Connolly (1984), Cermak and Henderson (1985), Peters, Romine, & Aykman (1975), and many others. Younes, Rasner, and Webb (1983) found significantly decreased neuromaturity in 119 learning disabled children, as compared to the 152 controls. Tarnopol and Tarnopol (1979), Obrzut and Hynd (1983), and Adams (1978) considered neurologic dysfunction as the cause, not just a correlate, of learning disabilities.

With the knowledge that neurological soft signs always accompany learning disabilities came attempts to identify and treat these factors earlier, before school age. Frances-Williams (1976) compared performance of preschool children noted to have neurological dysfunction in the newborn period with a control group. Their scores were significantly poorer. In a follow-up study, at 8 to 9 1/2 years old, only 9 of the 42 index children were reading at age level, and continued to score significantly below their control peers. Further research on early identification of children at risk for developing learning and academic problems was encouraging according to Hertzig (1981), Fuller, Guthrie, and Alvord (1983), Colletti (1979), and others. Prematurity, pregnancy and perinatal problems, and low birth weight all were found to predispose a child to later learning disabilities. Vogler, DeFries, and Decker (1985) and Kripke, Lynn, Madsen, & Gay, (1982) were able to show a familiar tendency and suggest there may be a hereditary trend. The comprehensive, follow-up study by Gillberg (1985) is convincing evidence that we need to identify and remediate these children before they attend primary school and exhibit behavioral and school achievement problems. In contrasting the 10-year-old to the 7-year-old performance of a group of children diagnosed as minimally brain damaged, the researcher found a positive prognosis for dissipation of the neurological problems in the 3-year period. However, the academic, behavioral and psychosocial problems increased. The author attributed this to the secondary effects (rejection, scapegoating, frustration, etc.) which resulted from the primary deficit (neurological). So even when the primary problem was remediated, the secondary effects were not.

Cermak and Henderson (1985) and Connolly (1984) presented the numerous, standardized tests available for evaluating older children with learning disabilities. However those instruments depend upon academic skills and are not relevant for the younger child. Attempts at preschool testing were based on developmental age (Wood, Powell, & Knight, 1984), motor planning ability (Cornish, 1980), psychological testing (Frances-Williams, 1976), and sensorimotor integration development (Ayres, 1979). The Southern California Sensory Integration Test by Ayres

(1972), a standardized test for learning disabilities for older children, made some recommendations for testing younger children by clinical observations of neurological sensorimotor deficiencies. The subjective observations involved having the child complete various sensory and motor tasks and rating performance on a scale. The underlying assumption of this type of testing was that the child's ability to process sensory input for effective motor output is a reflection of the intactness of the central nervous system. Based on the clinical observations of Ayres (1972) and other relevant testing materials, DeGangi and Berk (1983) and Miller (1982) developed objective, standardized instruments for evaluating preschool children with minimal cerebral deficits. Both Will (1986) and Miller (1982) view early identification and remediation as the key to prevention of later academic learning disabilities. Preschool intervention as a preventative was too new a concept, however, for any follow-up studies to have been done. Only by instituting such programs and documenting objectively the children's performance could we begin to see effects.

CHAPTER III

ANTICIPATED OUTCOMES AND EVALUATION INSTRUMENTS

Goals and Expectations

With the strong indication of the positive relationship between early intervention and prevention of academic learning disabilities, a demonstration service project was proposed to improve the effectiveness of therapeutic services to preschool children with minor cerebral dysfunction in the target county.

The general goals of the practicum were twofold. All preschool children with possible minor cerebral dysfunction who were referred to either the PT/EIP or ASCP would receive adequate educational and/or therapeutic programming. The preschool children who had been remediated for mild sensorimotor problems would demonstrate improved preacademic abilities in coordination, perceptual-motor function, task attention, and other prerequisites to academic success.

Behavioral Expectations

It was anticipated that:

1. All children, who were diagnosed as "at developmental

risk" (or a synonymous term), referred to either the PT/EIP or ASCP, and tested within the normal level of achievement of sensorimotor milestones and function, would be evaluated for mild cerebral dysfunction with either the Ayres Test for Sensorimotor Integration (TSI) or the Miller Assessment for Preschoolers (MAP). See Appendix B.

2. For every 10 children tested, 8 would demonstrate deficits in perceptual motor, coordination, attention focusing, and/or another academic prerequisite area and would participate in an individualized sensorimotor integration program of at least one session per week throughout the remediation period. This objective was measured by attendance records documented on data sheets. See Appendix C.

3. Seven of every 10 parents of preschool children with mild cerebral dysfunction would acknowledge the neurologic problem and no longer attribute functional difficulties to laziness "not trying", or other affective factors. This was to be measured by documentation of test scores and parent conferences on forms included in Appendix C.

4. All preschool educators would demonstrate increased knowledge of the importance of early educational programming for mildly handicapped children as a preventative for later developing learning disabilities. This was measured by questionnaires at the beginning and at the end of the implementation period. See Appendix C.

5. Nine of every 10 children who received an individualized remediation program for mild sensorimotor problems during the school year would score higher on one of the two sensorimotor integration tests at the end of the year. See Appendix B.

6. Four of the six preschool graduates previously diagnosed "at developmental risk", who had received the individual remediation program for mild sensorimotor deficits would test acceptable for regular first grade placement, as measured by the county Board of Education Standards.

Mechanism for Recording Unexpected Events

Since documentation of each physical therapy intervention session is the rule and practice of the profession, it continued throughout this practicum via the Data Sheet in Appendix C and served as the mechanism for recording unexpected events in the direct intervention. In addition, a practicum log was maintained from May 22, 1986 through June 17, 1987 at which time the implementation was completed. The log book served as a mechanism for recording unanticipated events and obstacles.

Evaluation Instruments

The specified terminal behaviors for each objective were measured by the following instruments:

1. The MAP, a highly structured, standardized, and objective testing instrument was chosen because of comprehensiveness and ease of administration and scoring. See Appendix B. The 27 core test items sampled both a broad range and a hierarchy of developmental domains, thus providing the framework for the remediation period. The brevity and simplicity of both the administration and scoring enabled the MAP to be easily instructed to and used by preschool professionals in direct care situations. Both Miller (1982) and Slaton (1985) have documented the statistical soundness and usefulness of this objective instrument for identifying preschool children with preacademic learning problems. The TSI was chosen as an alternative measurement instrument for those children unable to tolerate the structured format of the MAP because of the severity of their

hyperactivity, attention deficit, or other preacademic learning disturbance. Although it is subjective, unstructured, and based on clinical observations, the format and test items have been the accepted assessment for the target population for many years.

2. In addition to the MAP and the TSI, data sheets, documenting the child's attendance and participation at the scheduled remediation period, were used as the evaluation instrument for this objective. See Appendix C. These forms provided not only a record of participation but an account of the activities, child's reactions and successes, as well as a formative evaluation instrument.

3. Objective three was planned to be measured by parent testing and conference participation. The five item testing tool and conference record included in Appendix C were developed by the author to provide both objective and subjective evidence of each parent's increased knowledge and understanding of his child's preacademic learning disabilities.

4. A brief, five item questionnaire was developed by the author to measure the preschool educators' knowledge of preacademic learning disabilities. See Appendix C. The instrument was administered at the beginning of the initial and the final inservice sessions, which were held at the beginning and at the end of the implementation period. Inservice attendance was documented on an inservice training record. See Appendix C.

5. The MAP and TSI, in addition to being used for identification of appropriate children, served as the summative evaluation measure for documentation of changes in each child's sensorimotor integration ability. By comparing pre and posttest scores for each child, the effectiveness of the intervening individualized, remediation program was partially assessed. Since the MAP, and the TSI to some extent, accounts for developmental changes by using age appropriate forms, the suggested success (or failure) of the intervening program was given more credence.

6. Feedback information regarding the graduates' public school placements provided yet another objective

measure for successful program implementation.

CHAPTER IV

SOLUTION STRATEGY

Discussion and Evaluation of Possible Solutions

There were several possible ways to address the needs of this population of preschool children. One possible solution was conducting inservices for preschool teachers and behavior specialists at both agencies to familiarize them with the evaluation and intervention procedures for children with minor sensorimotor problems and to urge them to implement such programs. A second possible solution was for the consultant physical therapist to evaluate the preschool children and outline a formal sensorimotor remediation program which would be conducted at least one day a week by either a therapist or a preschool educator. The therapist would then reassess the child's progress at the end of the school year using the same evaluation tool as on the pre-test. Both the pre- and the post-test sessions could include scheduled parent interviews for discussion of the child's sensorimotor deficits, testing results, and appropriate home activities and physical management. The third possible solution was similar to the second except that the consultant physical therapist would do all remediation as well as intervention components. The therapist then would discuss informally with the preschool staff appropriate classroom sensorimotor games for carryover activities.

Justification for Selected Solution

The second solution was implemented because it involved the greatest staff training by actual participation in the project. As the preschool educators became more knowledgeable they incorporated more informal sensorimotor stimulation into the school day and became good ambassadors for encouraging parent follow-through with home activities. In addition, this solution had the greatest possibility of self-perpetuation because the implementation did not rely solely on one individual.

Report of Action Taken

Once the evaluation instruments and intervention materials and supplies were received and assembled as well as the testing and implementation areas established, identification and pretesting of potential target children began. These preliminary processes transpired throughout October, 1986. Since no preschoolers with mild sensorimotor deficits were being serviced by the PT/EIP at that time, the administrator authorized testing and programming for students attending the preschool component of the facility (ARC). The pretesting of all preschool children at both facilities, which began in October, 1986 was completed before the holiday vacation on December 19, 1986. Since the target children were bused to and from the schools and attended full day programs, it was not feasible for the parent to participate in the pretesting conference and program implementation. Rather each teacher and/or therapist was inserviced in test results and appropriate classroom activities appropriate for inclusion during the school day, which then became part of that child's individual educational program.

Coincidentally with the pretesting period, formal and informal inservicing regarding preacademic learning disabilities, testing procedures, and the needs of individual, tested children was initiated. See Appendix E. The first inservice was held October 25, 1986 and frequent inservices were held throughout the implementation period with the last one documented on June 17, 1987 (see Appendix E).

Pretest evaluation results were analyzed by the author during December, 1986 and individual programs established. Montgomery and Richter (1986), Kirk (1987), and Eastman & Safran (1986) provided additional sources for appropriate activities for remediation intervention. When both preschools resumed in January, 1987, the appropriate agency staff member(s) was inserviced in the remediation exercises and session documentation methods for each child. All programs were begun in January, 1987 with each session lasting 30 to 45 minutes and following a given format as outlined in Appendix F. Each child's data sheet received a documentation note at the end of each session providing formative evaluation data for activity advancement. A sample one is included in Appendix F. Individual sensorimotor integration remediation sessions were held at least weekly through May, 1987 at which time the posttest sessions and inservices were held. The author monitored each child's program by meeting with the agency implementation person (volunteer, teacher, therapist, or student therapist) and/or observing the implementation at least once a week. Documentation of the conferences and informal inservicing is included in Appendix E. Reassessment of each child's preacademic learning disabilities occurred during May and June, 1987 with the last teacher/therapist inservice and posttest sessions held in June, 1987 as projected. The final conferences and inservices focused on program continuation and MAP and TSI administration procedures. When the 1986-87 preschool year ended on June 18, 1987, most of the graduates had been tested by the Board of Education for Public School placement, and provision for continuation of the sensorimotor integration program for incoming students at both preschools had been accomplished.

CHAPTER V

RESULTS, RECOMMENDATIONS AND DISSEMINATION

Results

Expected Results

Eighteen children were identified from the two target preschools as potential candidates for the intervention program. Continued absenteeism prevented observation of one child and three others were rejected for practicum participation because of the severity and nature of their cerebral deficits. All three were diagnosed as moderate Cerebral Palsy, did not test normally on motor milestone development, and were receiving appropriate therapeutic intervention. All 14 qualifying children were assessed, 11 with the MAP and 3 with the TSI, thereby fulfilling the first objective for the practicum (see Appendix G).

All 14 students demonstrated mild sensorimotor integration deficits and specific areas of weakness on the evaluation instrument and participated in an individualized sensorimotor integration program during the 18 week remediation period (see Appendix G). Ten of the 14 children attended greater than one session/week (range of 19 to 33 total sessions attended per child). Two children attended 16 sessions and two others 17 sessions each. Recurring illnesses, high absenteeism, and one student's withdrawal accounted for the loss of intervention time. The second behavioral objective of adequate evaluation and appropriate remediation activities for this previously neglected population of at-risk children was met basically. The author was slightly optimistic regarding preschool attendance regularity.

The third behavioral objective, that of educating parents regarding preacademic learning disabilities and involving them in program participation, was unrealistic and not met. Since the students at both Centers commute by bus and are drawn from throughout the large County area, the parents were not readily available. In addition, with all children attending full day school sessions, it was found more feasible and effective for the teacher, rather than the parent, to be alerted to each child's preacademic learning disabilities and to participate in remediation activities. At least 22 individual teacher conferences were held by the author over the implementation period as documented in Appendix E. In addition, all teachers attended at least some of the "Mousercize" sessions, small group sensorimotor periods with equal numbers of adults and children (usually 3:3), and some participant teachers attended all sessions. The sessions focused on perceptual-motor, coordination, tactile, vestibular and motor planning activities in a fun, aerobic-like session. Since the teachers communicate regularly with the parents, it is felt that more parents will, in fact, become more knowledgeable and involved with preacademic learning disabilities in the future.

The fourth, behavioral expectation, that all targeted preschool educators would demonstrate increased knowledge regarding preacademic learning difficulties, was partially fulfilled. Of the 15, who took both the pretest and the posttest, 14 scored the same or better on the posttest with 9 teachers scoring one hundred percent correct on both tests. Forty-one teachers, who took either or both tests, demonstrated a greater number of correct answers on the posttest (see Appendix G). The author, who has been interested in preschool learning disabilities for several years, presented several inservices on the subject before the practicum experience to many of the same teachers. The data indicate that this group of teachers was already knowledgeable and cooperative.

Twelve of the 14 children, who had participated in the sensorimotor integration program, scored higher on the posttest, either by increased number of correct responses, increased number of completed items, or by advancing from the TSI to the MAP. Both the student data and the performance information packet of one student are included in Appendix G. Of the 13 students, who completed both the pretest and the posttest, 12 scored higher on the posttest. The fifth behavioral objective was realized, therefore. Preliminary indications were that the student, whose parents withdrew him from school in May, would also have achieved a higher score on the posttest.

Of the six students graduating on to the public school system, three have been recommended for regular school placement, one for a visually impaired classroom, one for hearing impaired class, and one for educable mental retardation placement. One of the children has already been tested and assigned regular school placement. Although this "success" rate did not fulfill the expected result, it does show positive effects of the intervention strategies used. In addition three of the eight children, not yet old enough for public school placement, scored within the normal range on the posttest and are being considered for regular preschool placements.

Unexpected Results

In analyzing the resultant data generated by the practicum intervention, it became evident that an age discrepancy existed between the two Centers. Although both service "at risk" children from birth to five years old, all targeted children at the ASCP were three year olds (X = 3 years 6 months) at pretest and at the ARC primarily four year olds (seven 4 year olds and two 3 year olds with a X = 4 years 2 months). This difference in no way affected the practicum implementation, but was an interesting observation.

Another unexpected result was the high incidence of children, who qualified for the sensorimotor integration program, who had a history of prematurity and/or perinatal medical findings (see Appendix G). Of the 14 preschoolers, 6 were premature and 8 experienced medical problems immediately at birth or within 3 weeks. One other student was born to a retarded, single, teenager which immediately placed him "at risk". For two other students the birth history was unknown because of foster home placement. These findings confirm the findings of Blackman, Lindgren, Harper, Hein, & Healey (1986), Campbell and Wilhelm (1985), Haddars Algra, Touwen & Huisjes (1986), and Astbury, Orgill, & Bajuk (1987) that infant and perinatal difficulties portent later sensorimotor and learning deficiencies. As phrased by Blackman et al (1986), "Since some high-risk children who do not manifest serious disability in the early years may have more subtle learning problems, continued surveillance appears to be warranted."

Another result which was unexpected, but which enabled greater and more effective program implementation, was the enthusiastic support and classroom implementation by the participant teachers. They borrowed references and appropriate intervention materials, requested followup activity information for each child, eagerly shared progress, which they had observed, and incorporated many more tactile, vestibular and sensorimotor planning activities in the classroom day. Another outcome, which facilitated intervention and progress, was the assignment of student therapists to the practicum implementation project. This facilitated educating them in the evaluation and therapeutic intervention of preschool children with minor cerebral deficits. The education process continued as they presented inservices, returned to their colleges with new insights, which they shared with peers and professors, and served more effectively the families with whom they came in contact.

The two County-wide inservices by the author in October, 1986 and February, 1987, as documented in Appendix E, provided a broader exposure in the Community to the needs of the child with minor sensorimotor deficiencies and the importance of appropriate preventive learning disability testing and intervention at the preschool level. This resulted in contacts and/or meetings at four other community preschool agencies and an expressed interest by public school personnel who have, by federal mandate, become responsible for identification and education of preschool children with special needs.

The final unexpected result was the continuation of the practicum programs at both the ASCP and the ARC. Concentrated efforts were made successfully to engage all therapists of both centers into the process. All physical and occupational therapy staff in both preschools requested test administration instruction, implementation materials, resources and references, and are continuing to implement the programs. Both Centers have ordered (one has received) the MAP testing kit, manuals, scoring sheets and booklets.

Unanticipated Events

Two unanticipated events, initially devastating, markedly changed the implementation of this practicum and, in retrospect, enabled it to have a considerably greater positive effect on the children, the community, and the two preschools. Although the author was treating 22 preschool children in the PT/EIP in the Fall of 1986, not one qualified as a practicum participant. Fortunately, the administrator agreed to practicum implementation with the preschool rather than the PT/EIP component of the ARC agency (see Appendix A). This decision facilitated an increased number of identified children, participating educators and therapists, and of greater concurrent dissemination of information regarding preschool sensorimotor deficits and prevention of learning disabilities. The second event, that of the lack of feasibility of including parent participation in the process, also provided more effective practicum implementation because the educators and therapists assumed the carryover of the child's program into school day activities. In addition they were alerted to sensorimotor integration needs for all preschool children and included appropriate such activities with all children. The opportunity to speak to a County-wide audience, as previously discussed and documented in Appendix E, was an unanticipated bonus which enhanced dissemination and provided unexpected positive results.

The arrival of two student therapists to the Centers coincidentally with the practicum implementation period was a welcome unanticipated event. An occupational therapy assistant student (SOTA) was assigned to the ASCP and a student physical therapy assistant (SPTA) was assigned to the ARC preschool in January, 1987 for internship. Each was assigned to the sensorimotor integration project by her respective supervising therapist. After completing training with the author (see Appendix E) they conducted the intervention sessions into March (ASCP) and through April (ARC), 1987. In March, 1987, a retired special education teacher, who volunteered daily at the ASCP, assumed responsibility for continued implementation at that Center. The author monitored the programs weekly, rather than monthly as projected (see Appendix E) and observed informally many class activities on a regular basis to monitor sensorimotor activities throughout the school day (see Appendix G).

One final, unanticipated occurrence was the effectiveness of sensorimotor integration therapy on other than children with minimal cerebral dysfunction. Two children at the ASC, with profound deficits, markedly delayed motor milestones, and no assessed musculoskeletal abnormalities, received therapy which focused on vestibular and tactile stimulation. Increases in alertness and interpersonal awareness, toleration of tactile and movement sensations, and motor milestone advancements (one child) were all noted after the intense implementation period. Neither child had shown any positive changes in the two years prior to the intervention. Montgomery and Richter (1986) verify the effectiveness of broader application of these intervention techniques which have traditionally been reserved for mildly involved children.

Conclusions

The positive outcome of this practicum verifies the results of Kirk (1987), Miller (1982), Ayres (1978), Cartwright (1981) and others that preacademic learning disabilities can and should be addressed early in the preschool years. As Kirk (1987) stated:

> "Both our experience with preschool children and results of the research that has been carried out with children who have developmental learning disabilities are very encouraging. The research demonstrates that if we start with children at a young age we can partially or totally overcome these disabilities by the time they enter school. By correcting and ameliorating these disabilities we can help prevent children from becoming learning disabled when they enter elementary school."

Recommendations

It is recommended that:

1. All children, who have a history of perinatal and/or early neurological difficulties, be periodically screened for developmental learning disabilities during the preschool years. Some "high risk" children who do not manifest serious disability have subtle learning problems which will cause them academic failure if not identified and remediated early.
2. Appropriate evaluation instruments and intervention methods for assessing and remediating preacademic learning disabilities be more widely publicized, used, and studied for effectiveness.
3. Teachers, parents, and other preschool caregivers be made more aware of the occurrence, correctability, and consequences of minimal cerebral deficits in young children.
4. This pilot practicum program continue and be expanded to include all educational facilities which have preschool programs. Only in this way will we serve appropriately all the at-risk children in the County.
5. The overwhelming evidence which correlates initial perinatal medical or neurologic abnormalities to later learning disabilities be acknowledged. It can serve as a basis for causative research efforts as well as expanded preventative programs.

Dissemination

Dissemination of the practicum results has already begun. Sharing of the outcomes, appropriate evaluation instruments, and remediation techniques for preacademic learning disabilities with the preschools' staff and other County preschool caregivers has facilitated greater awareness and program implementation. It is planned also to meet with representatives of the County Board of Education regarding the practicum outcome and need for preventive learning disabilities intervention at the preschool level. Projected additionally is a second meeting with the Childfind personnel to familiarize them with the practicum results and evaluation instruments (see Appendix A). The author has been requested to present her findings to the Pediatric Special Interest Group at one of the Fall, 1987 meetings. This group consists of pediatric health professionals from throughout a three county area of the State.

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APPENDIX A

LETTERS OF SUPPORT
FOR PROJECT

ARC

BOARD OF DIRECTORS

August 7, 1986

To Whom It May Concern:

Mrs. Revelj has proposed a project which has great potential value to our agency.

Each year, in our early intervention and pre-school program, we service a number of children with minimal cerebral deficits who demonstrate only mild pre-academic and sensorimotor problems. These children, upon graduation, often do not quite "fit" into a regular school program.

This expanded program which focuses on appropriate intervention, during the preschool years, through identification and remediation will enhance ARC's ability to serve the young developmentally disabled population in County.

Mrs. Revelj has been associated with our agency for some time. She is innovative and has demonstrated the knowledge, organizational skills and ability to complete this project.

The agency strongly supports the project and feels confident that it will be implemented as designed.

Sincerely,

Executive Director

SG/ms

Center, Inc.

July 12, 1986

Elizabeth O. Revelj
884 Gardenia Lane
Plantation, FL 33317

Dear Betsy:

In response to our recent conversation I am writing this letter in order to document the need for therapeutic services for infants and young children afflicted with minimal brain damage.

These children who show a history of "insult" to the brain need early and immediate occupational and physical therapy services in a controlled setting. The neurological impairments these children experience cannot be adequately treated in the current programs available for mentally retarded children.

To the best of my knowledge, there are no therapeutic programs available in County which serve the learning disabled, minimally brain damaged young child. Consequently, these children are either receiving no services, or are receiving services in programs designed to serve the physically handicapped and mentally retarded.

I am in support of a home or centrally based program which will provide occuaptional therapy, physical therapy, sensory integration and other much needed therapeutic services to infants and young children with minimal brain damage. There is a great need for such a program in this community, and our Center is pleased to participate.

If I can be of any further assistance to you please feel free to contact me.

Sincerely,

CENTER, INC.

Director of Developmental Training Programs

JPM/mbt

A Center Serving Mentally Retarded, and Developmentally Disabled Children

BOARD OF DIRECTORS

August 7, 1986

To Whom It May Concern:

Mrs. Revelj has come to me with a proposed project which I feel would benefit our agency. The project consists of the testing of a group of our children in both our early intervention and preschool programs who demonstrate only mild pre-academic and sensorimotor problems. Based on our findings we would then devise specific programs for each child. It has been found in the past that this particular group of children, upon graduation, had a difficult time adapting to a regular school program. We anticipate that by treating each individualized problem, we can minimize this difficulty.

I have worked with Mrs. Revelj approximately two years. During this time she has demonstrated the skills and expertise necessary to carry out this project. I am looking forward to assisting Mrs. Revelj in gathering data and devising programs for those children that are tested.

Sincerely,

Regestered Physical Therapist

TSP/gad.

August 5, 1986

To Whom It May Concern:

The project which Mrs. Elizabeth O. Revelj has proposed is a much-needed one for County. Although we are able to identify more children with developmental problems at a very early age now than previously, there are often inadequate program options to serve these children. The child with only mild cerebral disfunction and/or at risk for developmental disabilities is not frequently followed by any formal program until he reaches school age. These minimally handicapped children with neurologic soft signs are usually the same ones who develop learning disabilities in grade school according to research documentation. It is an exciting prospect that we can identify problems at a preschool level and perhaps prevent later learning disabilities.

Therefore, I strongly support the program which Mrs. Revelj has proposed.

Sincerely,

[illegible]
Child Find Specialist,

Therapeutic Health Specialists, Inc.

RE: IDENTIFICATION AND REMEDIATION PROGRAM FOR PRESCHOOL CHILDREN
CENTER,

TO WHOM IT MAY CONCERN:

The Center is one facility in that services preschool children diagnosed as "At Developmental Risk". At this time there is no formal program in the agency that identifies and remediates these preschool children who also demonstrate mild sensori motor dysfunctions.

A program such as this is desparately needed because of the importance of identifying, treating and normalizing these children early while CNS is still developing and before they experience failure in adapting to their environment.

While it would be beneficial for the children, it will also be a great support system and a source of information for the parents during this critical time. If these preschoolers were identified at an earlier age many problems could be prevented such as postural deformities, contractures of the extremities and mealtime problems. Success would also be present in regards to cost effectiveness. Early intervention programs can be implemented to prevent learning disability problems which occur later on during the children's experiences in the classrooms. If these problems are caught early enough and intervention is implemented, these children are able to lead a more normal well integrated life without the frustrations that accompany a child's learning disabilities/ sensori-motor dysfunctions.

Mrs. Revelj has been a colleague of mine for the past five years. She is known throughout the medical community as a highly qualified Physical Therapist with a track record that in unbeatable. With her 25 years of experience as a Professor, Staff Therapist and Chief Therapist she is well qualified to conduct such a program. Her knowledge in this area is insurmountable. I will be more than happy to help Mrs. Revelj with this program.

OTR
, OTR

CC/aee

APPENDIX B

TESTS FOR SENSORIMOTOR INTEGRATION

TEST FOR SENSORIMOTOR INTEGRATION

1. Hyperactive-distract:	2. Tactile Defense	3. Muscle Tone
3-normal activity	3-no responses	3-normal
2-slight hyperactive	2- 1 or ? response	2-slightly hypo
1-defese hyperactive	1- 2 resp. or def.	1- dev. hypotonic

4. Eye dominance: S's eye through ring of E's finger at 6 inches......R L
S's eye through hole in paper or cone at 3 feet................R L
S's eye through his hands at ceiling...........................R L
S's thumb on distant object....................................R L

5. Eye movements:	Across Midline	Pursuits in general	Convergence	Quick localization
	3. normal	3 normal	3 normal	3 normal
	2. slt. irreg	2 slt irreg	2 slt irreg	2 slt irreg
	1. def poor	1 def poor	1 def poor	1 def poor

6. Crosses midline pointing to moving pencil with both hands	Right	Left	both simul
	3 normal	3 normal	3 normal
	2 slt reluctance	2 slt relut	2 slt relut
	1 def. reluctance	1 def relut	1 def relut

7 Diadokokinesia	Right	Left	Both Simul
	3 normal	3 normal	3 normal
	2 slt deficiency	2 slt def	2 slt def
	1 def poor	1 def poor	1 def poor

8. Thumb-finger touching	Right	Left	Both Simul
	3 normal	3 normal	3 normal
	2 slt irreg	2 slt irreg	2 slt irreg
	1 def. poor	1 def poor	1 def poor

9. Co-contraction:	10. Equilibrium reactions - sitting	11. Postural Background Movement
3 normal	3 normal	3 normal
2 slt. deficiency	2 slt deficiency	2 slt deficiency
1 def. deficiency	1 def deficiency	1 def deficiency

12/ Hopping, Jumping	Right	Left	Both together
	3 normal	3 normal	3 normal
	2 slt irreg	2 slt irreg	2 slt irreg
	1 def irreg	1 def irreg	1 def irreg

13. Schilder's Arm Extension Test

Choreoathetoid	Post Change arms	Trunk Rotation	Head Resistance
3 normal	3 normal	3 normal	3 normal
2 slight	2 slight	2 slight	2 slight
1 definite	1 definite	1 definite	1 definite

14. Prone Extension posture:
3 holds for 20 or more seconds with moderate exertion
2 holds 10-19 seconds with great exertion
1 unable to assume or holds 0-9 seconds

15. Symet TNR, quadrupedal head flexed and extended
3 no change in joint flexion or extension
2 slight change in joint position
1 definite chnage in joint position

16. Asym. TNR
(a) Quad. position:
3 no flexion on passive head turning
2 slight flexion on passive head turning
1 definite flexion or head resistance
(b) Reflex inhibiting posture
3 can assume and maintain balance
2 can assume only with great difficulty
1 cannot assume

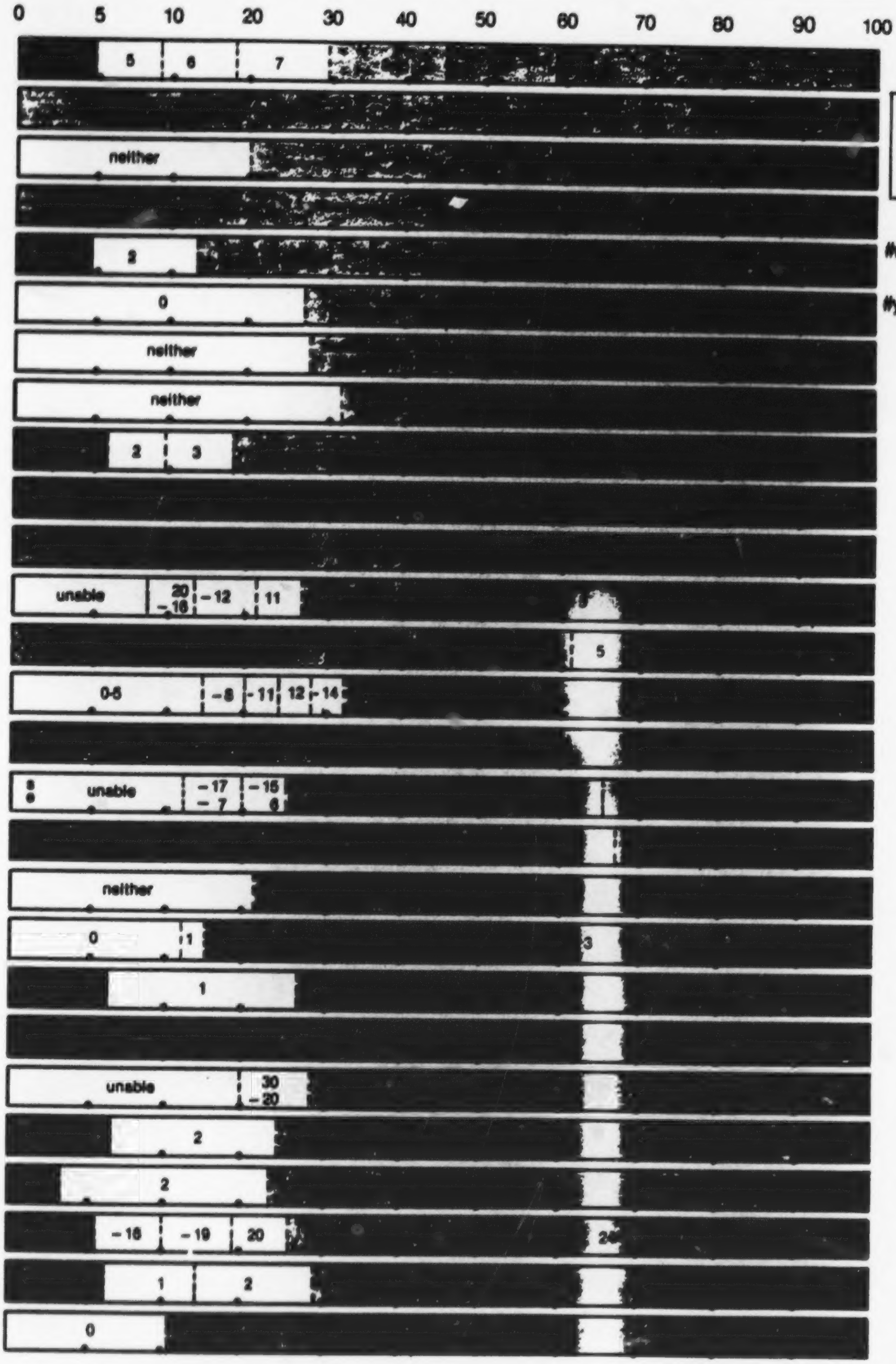
17. Nystagmus
3 normal excursion and duration
2 slightly reduced exersion or duration
1 absent or greatly reduced

MILLER ASSESSMENT FOR PRESCHOOLERS
ITEM SCORE SHEET

I
2'9"
to
3'2"

Child's Name ______________________ DOE ________
Phone ______________________ DOB ________
Parent's Name ______________________ CA ________

65



	0–100
TOWER	5 ¦ 6 ¦ 7
SEQ.	
*BLK DES	neither
*BLK TAP	
*STEREOG	2
*FIN LOC	0
*OBJ MEM	neither
*PUZZLE	neither
*FIG-GRD	2 ¦ 3
D-A-P	
*CAGE	
*VER WRT	unable ¦ 20 – 16 ¦ – 12 ¦ 11
*HAND-NOS	5
*ROMBERG	0-5 ¦ – 8 ¦ – 11 ¦ 12 ¦ – 14
*STEPG	
*WKS LNE	s e unable ¦ – 17 – 7 ¦ – 15 6
*SUP FLX	
KNE-STD	neither
*IMI POS	0 ¦ 1 ¦ 3
*TNG MVT	1
STAMP	
*MAZE	unable ¦ 30 – 20
*GEN INF	2
*FOL DIR	2
*ARTIC	– 16 ¦ – 19 ¦ 20 ¦ 24
*SEN REP	1 ¦ 2
*DIG REP	0

Final Score

#reds ________

#yellows ________

Artic.

mom
bake
dog
good
fun
cat

tap
pony
wait
knife
lady
tickle

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MILLER ASSESSMENT FOR PRESCHOOLERS
ITEM SCORE SHEET

II
3'3"
to
3'8"

Child's Name ______________________ DOE ______
Phone ______________________ DOB ______
Parent's Name ______________________ CA ______

Final Score

#reds ______

#yellows ______

0 5 10 20 30 40 50 60 70 80 90 100 66

TOWER	7	8			
SEQ.					
*BLK DES	only one				
*BLK TAP					
*STEREOG	3				
*FIN LOC	0	1			
*OBJ MEM	neither	miss fork			
*PUZZLE	neither	only one			
*FIG-GRD	−3	4			
D-A-P	0				
*CAGE					
*VER WRT	20-17	−13	-10	9	
*HAND-NOS	0	−2	3		
*ROMBERG	0	−9	−14		
*STEPG	unable				
*WKS LNE	−21 −7	−17 −5	−13 4		
*SUP FLX					
KNE-STD	neither	bo			
*IMI POS	0	1			
*TNG MVT	1				
STAMP	unable	20-12			
*MAZE	unable	30-12	−9	−7	6
*GEN INF	0	1			
*FOL DIR	0	1	2		
*ARTIC	−20	21	22		
*SEN REP	0	1			
*DIG REP	0	−2			

Artic.

mom
bake
dog
good
fun
cat

tap
pony
wait
knife
lady
tickle

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Miller Assessment For Preschoolers
Record Booklet

CHILD'S NAME: ______________________________

FAMILY CONSTELLATION: names and ages

Mother: ______________________________

Father: ______________________________

Siblings: ______________________________

____

____

____

Address: ______________________________

____

Phone: H)__________ Mo-W)__________ Fa-W)__________

	Year	Month	Day
D.O.E.			
D.O.B.			
C.A.			

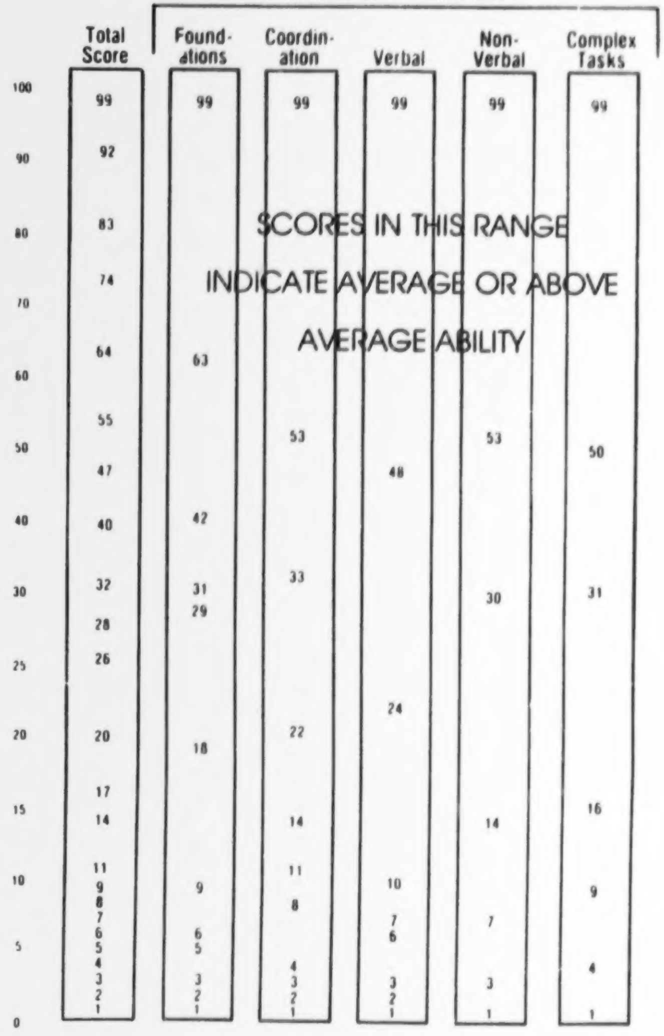
Final Recommendation: ______________________________

____

____

INDIVIDUAL PROFILE

Performance Indices



The Foundation for Knowledge in Development,
1901 West Littleton Boulevard, Littleton, CO 80120

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DEVELOPMENTAL HISTORY

PRENATAL HISTORY

Previous pregnancies: number and problems

History of pregnancy with this child: use of medication, health of mother, complications or problems

Length of pregnancy: number of weeks, length of labor

History of pregnancy: type of delivery, complications

EARLY HISTORY

Condition of new-born: Apgar scores, weight, height, problems

Feeding: method, duration, weaning, eating patterns, or problems

Sleep: patterns, problems

Activity level: child's favorite pastimes, reaction to movement

Toilet training: age, method, duration, problems

Medical history: hospitalizations, allergies, ear infections, other problems

Developmental milestones: age at which child completed:

sat alone ________ crawled ________ walked ________ ran ________
used words ________ 2-word sentence ________ 3 to-4 word sentence ________ asked questions ________
drank from a cup________ dressed self ________ used spoon ________ used knife ________
describe general coordination:____
describe ability to communicate:____

Any unusual behaviors or problems: *i.e.,* head banging, temper tantrums, rocking, breath holding, *etc.*

PRESENT STATUS

Medications currently taken:

Frequency and types of illnesses:

Sleep: **Toileting:**

Eating: **Activity level:**

Interaction with other children:

Attendance at preschool or day care: behavior, preacademic performance, socialization, play patterns

Describe coordination:

Describe language:

Note any problems:

Name / address of physician:

Name / address of other specialists treating child:

FAMILY HISTORY:	Mother	Father
Profession:		
Location:		
# Hrs. per week:		
Length of time employed:		
Marital status:		

History of family since birth of child: moves, changes, significant traumas, problems

Note if any siblings are having or have had problems:

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SUPPLEMENTAL OBSERVATIONS SHEET

MILLER ASSESSMENT FOR PRESCHOOLERS

☐ Preferred Hand

VISION

☐ Obvious crossed eyes
☐ Red or watery eyes
☐ Crusty eye lids
☐ Rubs eyes excessively
☐ Abnormal head posture/movement
☐ Squints or frowns when looking at objects
☐ Gets very close to work
☐ Abnormal eye movements i.e., restrictions, nystagmus

TOUCH

☐ Rubs, scratches area touched
☐ Negative verbal reaction to touch
☐ Uses fingertips rather than palms to manipulate objects
☐ Hands tend to be fisted
☐ Tendency to walk on toes when shoes are off

MOVEMENT

Extension/Flexion

☐ Resting postures and position changes often incorporate excessive neck hyperextension
☐ Anterior pelvic tilt
☐ Uses only some muscle groups actively when flexing—may "fix"

Weight Shifting/Rotation

☐ Compensates by "fixing" when shifts weight
☐ Does not use diagonal movements
☐ Uses lateral flexion rather than rotation
☐ Loses balance during rotation activities

Appearance

☐ Hypotonic muscle tone
☐ Hypertonic muscle tone
☐ Poor mouth closure
☐ Trunk or facial asymmetry

Stability

☐ Excessive internal or external rotation at shoulders and/or hips
☐ Arms tend to go into high guard position
☐ Bears weight medially or laterally on feet
☐ Hyperextends knee when walking
☐ Tends to "W" sit

Postural/Movement Patterns

☐ Overflow or associated movements
☐ Falls frequently, clumsy or awkward movements
☐ Movement always initiated to same direction
☐ Frequent postural readjustments in chair
☐ Holds body rigidly; seems unwilling to move quickly
☐ Primitive grasp
☐ Does not automatically assist with alternate hand

DRAW-A-PERSON

☐ Body parts not attached (1)
☐ Sides strikingly dissimilar (2)
☐ Draws monster, dinosaur, etc. (3)
☐ Much scribbling (4)
☐ Not identifiable as human figure (5)
☐ Shape of parts grossly inappropriate (6)
☐ Part usually drawn at older age present (*i.e.* toes, fingers, eyebrows) but elementary part missing (*i.e.* trunk, head, arms) (7)
☐ Much detail to one part at expense of total picture (8)
☐ Bizarre, disturbing quality (9)
☐ Unenclosed (*i.e.* facial features with no head) (10)
☐ Vague overall shape but individual parts hard to distinguish (11)
☐ Body parts definitely out of proportion (12)

SPEECH AND LANGUAGE

Expression

☐ Uses inappropriate vocabulary
☐ Does not use grammatical sentence structure
☐ Difficulty "finding" words
☐ Uses many vague or indefinite words or circumlocutions
☐ Tends to respond in simple sentences and short phrases
☐ Voice quality inappropriate for age or sex, *i.e.* harsh, hoarse, pitch too high or low, volume too soft or loud
☐ Dysfluent, *e.g.* stutters, repeats words or sounds, prolongs sounds, tension in body when speaks
☐ Echoes or shadows directions vocally or subvocally
☐ Excessive nonverbal response, *e.g.* nods, smiles, etc.
☐ Sounds reversed within words
☐ Words reversed within sentences

Auditory Ability

☐ Needs directions repeated
☐ Needs volume of directions increased
☐ Watches lips excessively
☐ Wears hearing aid
☐ Difficulty localizing sound, *i.e.* turning in direction of voice or sounds
☐ Seems to have difficulty discriminating similar sounds, *e.g.*, penny, pencil; gum, come; wait, wade

Intelligibility

☐ Difficult to understand
☐ Words run together
☐ Talks too fast/too slow
☐ Many articulation errors

Comprehension

☐ Responses usually delayed
☐ Need directions reworded
☐ Difficulty understanding task expected

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PERFORMANCE INDICES

R = # Red/
Y = # Yellow
	Sensory & Motor Abilities		Cognitive Abilities		Combined Abilities

	R ☐/☐ Y FOUNDATIONS INDEX	R ☐/☐ Y COORDINATION INDEX	R ☐/☐ Y VERBAL INDEX	R ☐/☐ Y NON-VERBAL INDEX	R ☐/☐ Y COMPLEX TASKS INDEX
TOWER		______Tower			
SEQUEN				______Sequen	
BLK DES					______Blk Des
BLK TAP				______Blk Tap	
STEREOG	______Stereog				
FIN LOC	______Fin Loc				
OBJ MEM				______Obj Mem	
PUZZLE				______Puzzle	
FIG-GRD				______Fig-Grd	
D-A-P					______D-A-P
CAGE		______Cage			
VER WRT	______Ver Wrt	______Ver Wrt			
HND-NOS	______Hnd-Nos				
ROMBERG	______Romberg				
STEPPING	______Stepping				
WKS LNE	______Wks Lne	______Wks Lne			
SUP FLX	______Sup Flx				
KNE-STD	______Kne-Std				
IMI POS					______Imi Pos
TNG MVT		______Tng Mvt			
STAMP	______Stamp	______Stamp			
MAZE					______Maze
GEN INF			______Gen Inf		
FOL DIR			______Fol Dir		
ARTIC		______Artic			
SEN REP			______Sen Rep		
DIG REP			______Dig Rep		

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MILLER ASSESSMENT FOR PRESCHOOLERS
ITEM SCORE SHEET

III
3'9"
to
4'2"

Child's Name ____________________ DOE ________
Phone ____________________ DOB ________
Parent's Name ____________________ CA ________

68

0 5 10 20 30 40 50 60 70 80 90 100

TOWER	7 | 8 | 9	
SEQ.	fail	
*BLK DES	only one	
*BLK TAP	neither	
*STEREOG	3	
*FIN LOC	1	
*OBJ MEM	neither | miss fork	
*PUZZLE	neither	
*FIG-GRD	0 | 1	
D-A-P	0 | −3 | 4	
*CAGE	0 | 1	
*VER WRT	20-13 | −9 | 8 | 7	
*HAND-NOS	0 | −3 | 4 | 5	
*ROMBERG	−14	
*STEPG	unable | D-4 | C-3	
*WKS LNE	−16 −4 | −13 3	7 0
*SUP FLX	0 | 1 | 2	
KNE-STD	neither | only one	
*IMI POS	0	2
*TNG MVT	1 | 2	
STAMP	unable | 20-11 | −9	
*MAZE	−7 | 6 | 5	
*GEN INF	1 | 2	
*FOL DIR	0 | 1	3
*ARTIC	−31 | −33	
*SEN REP	0 | 1	
*DIG REP	0 | −2	4

Final Score

#reds ________

#yellows ________

Artic.

hat
cup
man
window
dog
baby
gum
knife

pony
look
telephone
yellow
sugar
fishing
church
tickle

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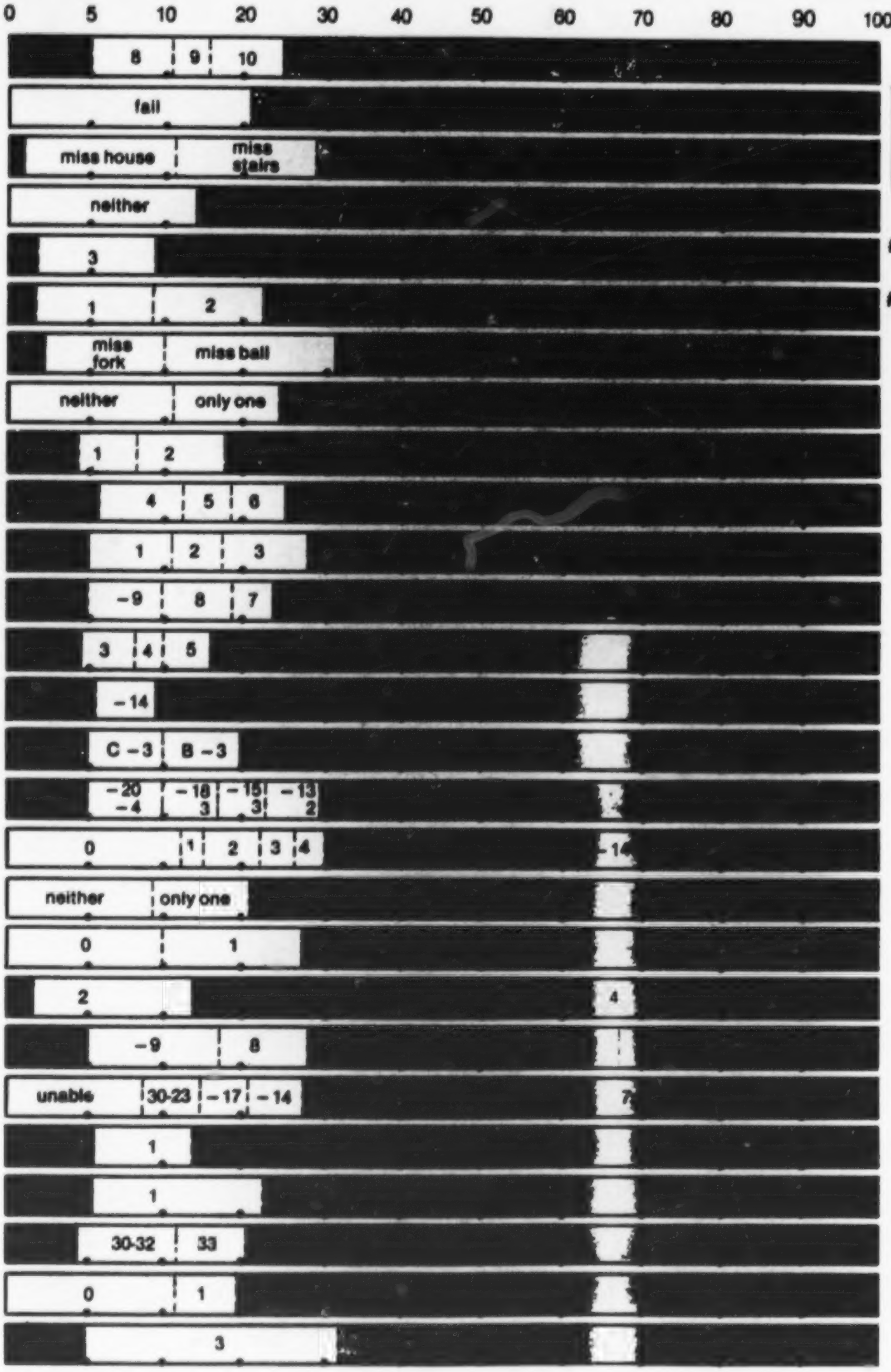
MILLER ASSESSMENT FOR PRESCHOOLERS
ITEM SCORE SHEET

IV
4'3"
to
4'8"

Child's Name ______________________ DOE ________
Phone ______________________ DOB ________
Parent's Name ______________________ CA ________ 69



TOWER	8	9	10		
SEQ.	fail				
*BLK DES	miss house	miss stairs			
*BLK TAP	neither				
*STEREOG	3				
*FIN LOC	1	2			
*OBJ MEM	miss fork	miss ball			
*PUZZLE	neither	only one			
*FIG-GRD	1	2			
D-A-P	4	5	6		
*CAGE	1	2	3		
*VER WRT	−9	8	7		
*HAND-NOS	3	4	5		
*ROMBERG	−14				
*STEPG	C −3	B −3			
*WKS LNE	−20 −4	−18 3	−15 3	−13 2	
*SUP FLX	0	1	2	3	4
KNE-STD	neither	only one			
*IMI POS	0	1			
*TNG MVT	2				
STAMP	−9	8			
*MAZE	unable	30-23	−17	−14	
*GEN INF	1				
*FOL DIR	1				
*ARTIC	30-32	33			
*SEN REP	0	1			
*DIG REP	3				

-14
4
7

Final Score

#reds ________

#yellows ________

Artic.

hat
cup
man
window
dog
baby
gum
knife

pony
look
telephone
yellow
sugar
fishing
church
tickle

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MILLER ASSESSMENT FOR PRESCHOOLERS
ITEM SCORE SHEET

V
4'9"
to
5'2"

Child's Name ______________________ DOE __________
Phone ______________________ DOB __________
Parent's Name ______________________ CA __________

70

0 5 10 20 30 40 50 60 70 80 90 100

TOWER	9	10	11		
SEQ.	fail				
*BLK DES	neither	only one			
*BLK TAP	neither				
*STEREOG	2				
*FIN LOC	2				
*OBJ MEM	miss fork	miss ball			
*PUZZLE	neither	only one			
*FIG-GRD	1	2			
D-A-P	6	7	8		
*CAGE	2	3	4		
*VER WRT	–9	–7			
*HAND-NOS	5				
*ROMBERG	0	1	2		12
*STEPG	C –3	B-3			
*WKS LNE	–43 –16	–33 –13			–
*SUP FLX	0	1	–3	4	4
KNE-STD	neither	only one			
*IMI POS	1				
*TNG MVT	2	3			
STAMP	–9	8			
*MAZE	30-19	–16	–13		
*GEN INF	1	2			
*FOL DIR	1				
*ARTIC	–30	31			
*SEN REP	1				
*DIG REP	3				

Final Score

#reds ______

#yellows ______

Artic.

teeth
look
telephone
fudge
yellow
fish

red
six
thing
there
very
sugar
scissors
bathtub
church
tickle

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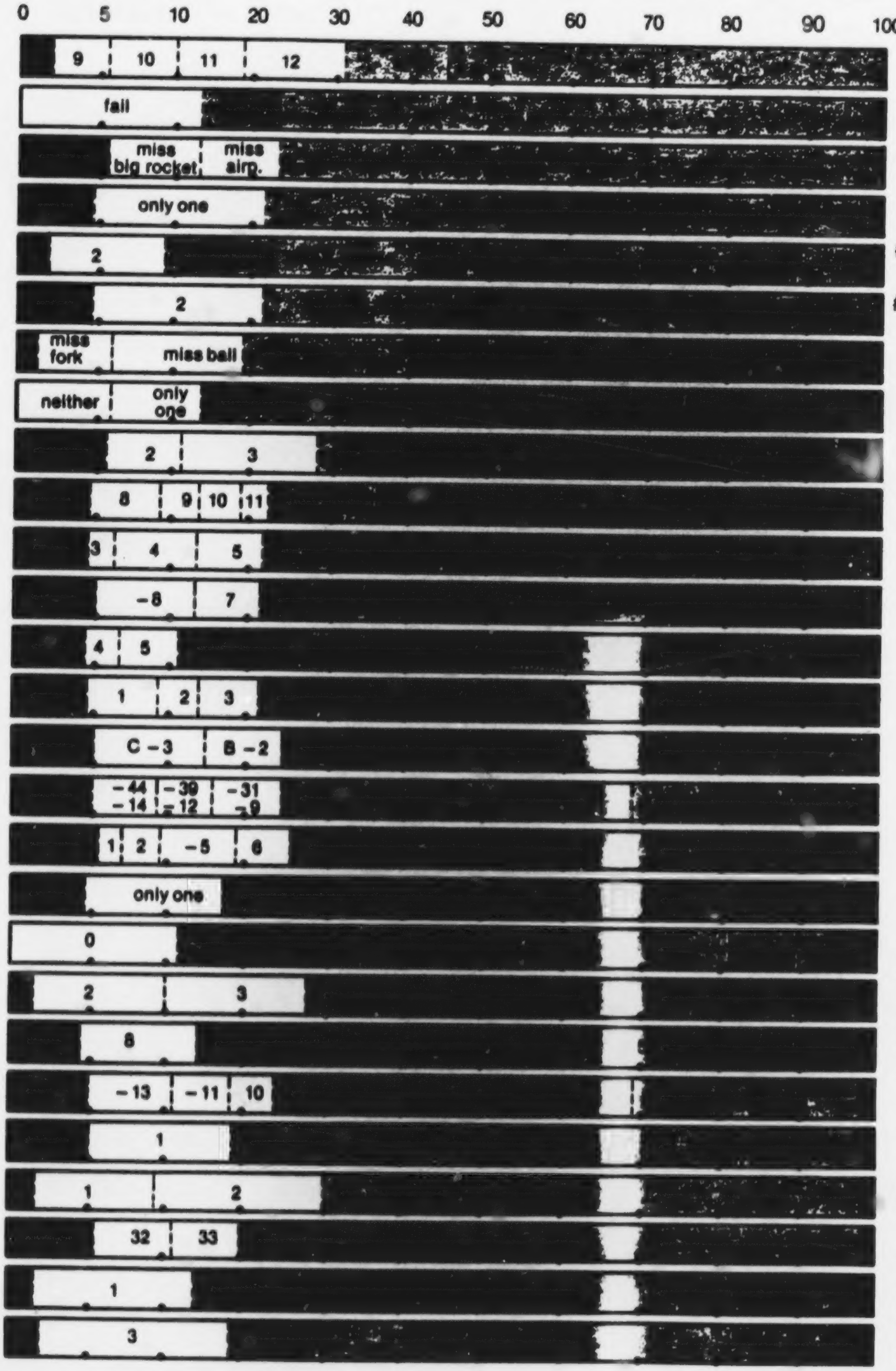
MILLER ASSESSMENT FOR PRESCHOOLERS
ITEM SCORE SHEET

VI
5'3"
to
5'8"

Child's Name ______________________ DOE ________
Phone ______________________ DOB ________
Parent's Name ______________________ CA ________

71



TOWER	9 · 10 · 11 · 12
SEQ.	fail
*BLK DES	miss big rocket · miss airp.
*BLK TAP	only one
*STEREOG	2
*FIN LOC	2
*OBJ MEM	miss fork · miss ball
*PUZZLE	neither · only one
*FIG-GRD	2 · 3
D-A-P	8 · 9 · 10 · 11
*CAGE	3 · 4 · 5
*VER WRT	−8 · 7
*HAND-NOS	4 · 5
*ROMBERG	1 · 2 · 3
*STEPG	C −3 · B −2
*WKS LNE	−44 −14 · −39 −12 · −31 −9
*SUP FLX	1 · 2 · −5 · 6
KNE-STD	only one
*IMI POS	0
*TNG MVT	2 · 3
STAMP	8
*MAZE	−13 · −11 · 10
*GEN INF	1
*FOL DIR	1 · 2
*ARTIC	32 · 33
*SEN REP	1
*DIG REP	3

Final Score ☐

#reds ________

#yellows ________

Artic.

teeth
look
telephone
fudge
yellow
fish

red
six
thing
there
very
sugar
scissors
bathtub
church
tickle

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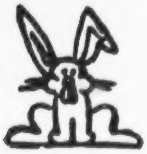
Page 1
Draw-A-Person
Time Limit 180°

DRAWING BOOKLET

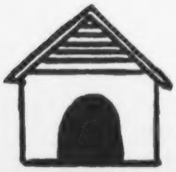
Page 2
Cage

practice
R L

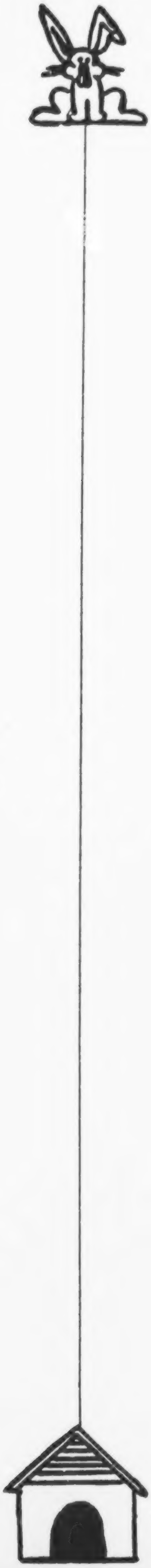
item
R L



Page 3
Vertical Writing
Practice
R L



Page 4
Vertical Writing
Item
R L



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General Counsel

July 17, 1987

Elizabeth O. RevelJ, MA, RPT
884 Gardenia Lane
Plantation, Florida 33317

This is in response to your letter dated July 7, 1987.

I am granting you permission to include a copy of the MAP record and drawing booklets and item score sheet in the appendix of your final report.

Thank you for your interest and advocation of the Miller Assessment Program. If possible, I would love to have a copy of your final practicum report.

Sincerely,

Lucy Jane Miller

Lucy J. Miller, Ph.D., OTR

The Foundation for Knowledge in Development
4857 South Albion Street • Littleton, Colorado 80121 • (303) 777-5353

APPENDIX C

PROJECTED DOCUMENTATION FORMS

PARENT INTERVIEW FORM

Date of Conference: ______________________________

Name of Child: ______________________________

Birthdate of Child: ______________________________

School of Child: ______________________________

Name of Parent: ______________________________

Please circle one answer. Write any comments in the space below each statement.

1. My child usually < tries hard
< gives up easily

because < he's lazy.
< he can't do the task.

2. My child is usually < quiet
< active

because < that's his personality.
< he has a handicap.

3. My child is usually < naughty
< well behaved

because < he can't help it.
< he wants to be.

PARENT INTERVIEW FORM
(Continued)

4. My child usually < likes to be with others
< likes to be alone

because < he has a handicap.
< that's his personality.

5. My child usually < plays with one toy a long time
< jumps from one thing to another

because < that's his nature.
< he doesn't understand or can't help it.

TEACHER

PARENT CONFERENCE OUTLINE

[illegible]

Date of Conference: ______________________________

Name of Child: ______________________________

Birthdate of Child: ______________________________

School of Child: ______________________________

Attendees at Conference: ______________________________

Name of Examiner: ______________________________

I. Administration of parent interview form.

II. Explanation of test results to the parent(s).

A. Review and demonstration of test tasks and expected behaviors for children of ______________'s age.

B. Review and demonstration of ______________'s performance.

C. Explanation and examples of ways in which ______________'s sensorimotor integration deficits affect his/her psychomotor performance as well as his/her affective state.

III. Explanation of therapeutic intervention strategies.

IV. Guidance in assisting the parent(s) in home application of intervention tasks and helping ______________ overcome his/her problems.

DATA SHEET

Date: ____________ Name of Student: ____________

Name of Therapist/Teacher: ____________

Physical Play Game(s): ____________

Games 1.
2.
3.
4.
5.

Date	Exercise Games Done Today	Initial When Done	Comments

QUESTIONNAIRE

Name: ______________________________

Date: ______________

Instructions: Please respond to each statement by circling the number to show how strongly you agree or disagree with what it says.

1 = I strongly agree.
2 = I agree.
3 = I am undecided.
4 = I disagree.
5 = I strongly disagree.

1. I would define "learning disabilities" as problems resulting from minimal brain damage.
   1 2 3 4 5

2. If I had a preschool child whom I felt was learning disabled, I would help him by enriching his sensorimotor experiences.
   1 2 3 4 5

3. I feel preschoolers with potential learning problems would do better if they were punished more so they learn to behave.
   1 2 3 4 5

4. I cannot identify preschool children with potential learning disabilities because this problem doesn't occur until the child tries to learn to read and write in primary school.
   1 2 3 4 5

5. If the child can achieve his developmental milestones, but is just "sloppy" or "clumsy" at them, he only needs better discipline or structure given to him.
   1 2 3 4 5

IN-SERVICE TRAINING RECORD

DATE: ________________

SESSION LENGTH: ________________

LOCATION: ________________

TOPIC OF SESSION:

PRESENTORS NAME/TITLE

COMPETENCY BASED CRITERIA	OBJECTIVES/OUTLINE OF SESSION CONTENT

PARTICIPANT NAMES	POSITION TITLE	HOUSE/SHIFT

APPENDIX D

INSERVICE HANDOUTS

APPENDIX D

INSERVICE ~~WORKSHOP~~ HANDOUTS

Evaluation and Preschool Programming for Minimal Brain Damage:

INSERVICE ~~Workshop~~ Objectives

The workshop participant will:

1. Be familiar with appropriate reference materials.
2. Be able to define:
    a. Minimal brain damage
    b. Mild sensorimotor dysfunction
    c. Learning disability
    d. Dyslexia
    e. Hyperactivity
    f. Sensory integration dysfunction.
3. Understand the process of sensory integration development and its relation to cognition and psychosocial development.
4. Know some symptoms associated with mild sensorimotor dysfunction.
5. Know some intervention guidelines in general.
6. Know some specific intervention techniques.
7. Be familiar with sensorimotor training program sequence.
8. Be familiar with test materials, general testing procedure, and expected, normal performance.

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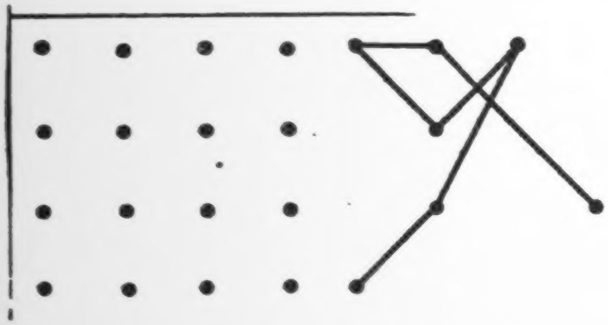
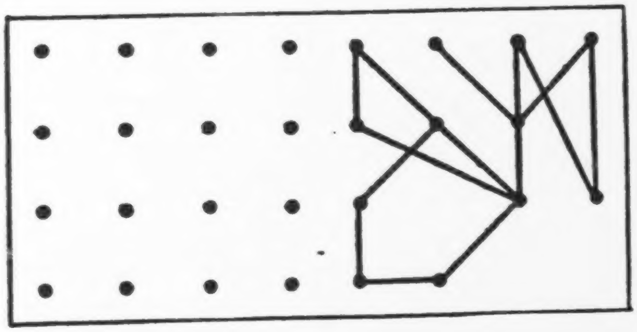




Sensory Integration

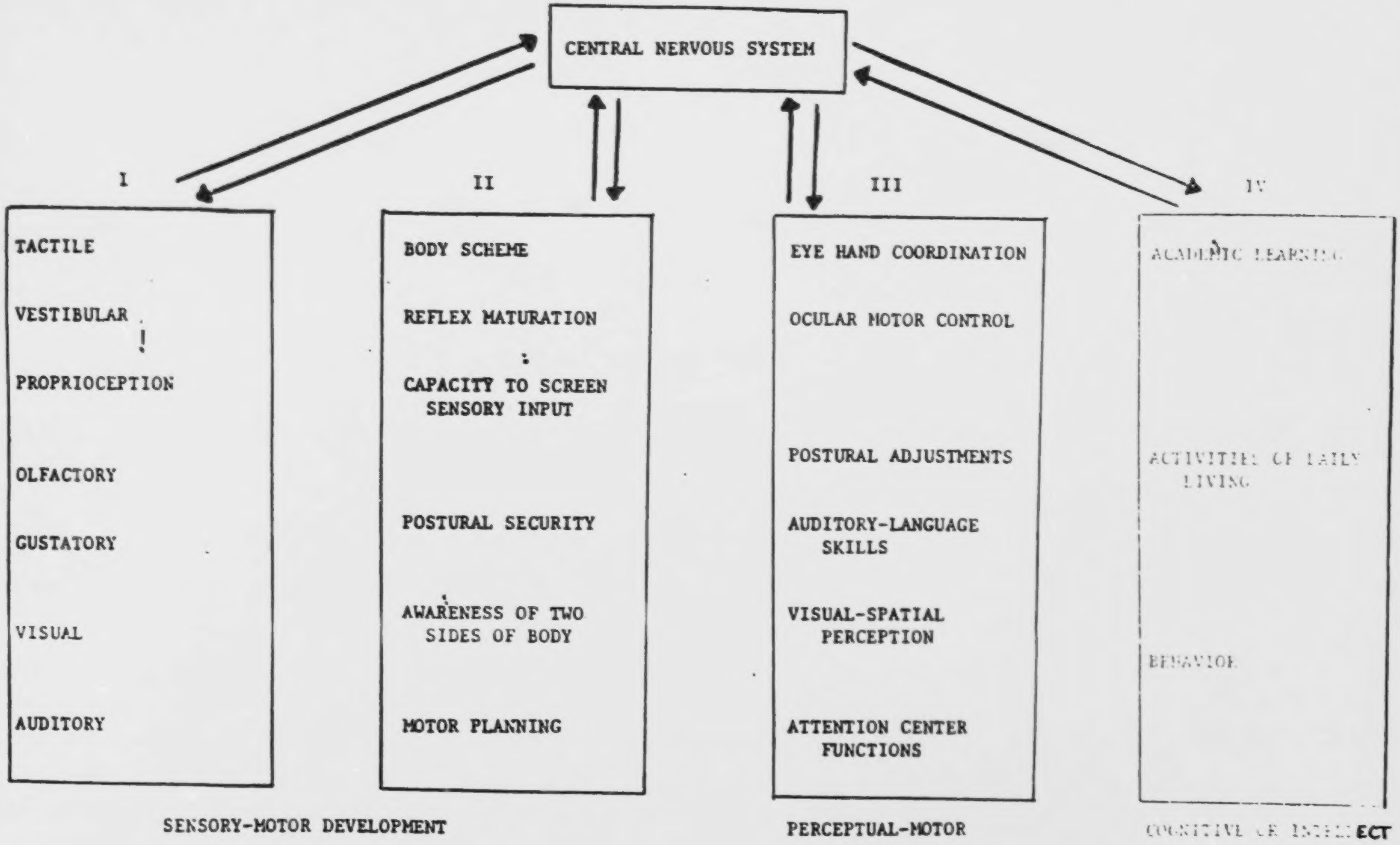
an overview

Prepared by:

Occupational Therapy Division
Rehabilitation Medicine Department
Good Samaritan Hospital

FIGURE I

SENSORY INTEGRATION


CENTRAL NERVOUS SYSTEM
I
TACTILE
VESTIBULAR
PROPRIOCEPTION
OLFACTORY
GUSTATORY
VISUAL
AUDITORY
II
BODY SCHEME
REFLEX MATURATION
CAPACITY TO SCREEN SENSORY INPUT
POSTURAL SECURITY
AWARENESS OF TWO SIDES OF BODY
MOTOR PLANNING
SENSORY-MOTOR DEVELOPMENT
III
EYE HAND COORDINATION
OCULAR MOTOR CONTROL
POSTURAL ADJUSTMENTS
AUDITORY-LANGUAGE SKILLS
VISUAL-SPATIAL PERCEPTION
ATTENTION CENTER FUNCTIONS
PERCEPTUAL-MOTOR
IV
ACADEMIC LEARNING
ACTIVITIES OF DAILY LIVING
BEHAVIOR
COGNITIVE OR INTELLECT

SENSORY INTEGRATION

WHAT IS SENSORY INTEGRATION?

Simply speaking, sensory integration is the ability to take in, sort out and connect information from the world around us. This process is controlled by our Central Nervous System (our nerves, our spinal cord and our brain). The information we take in comes through our senses. Our spinal cord and brain sort out and connect this information. In normal development, sensory integrative functions take place on an automatic level. In other words, you don't have to "think" about it. Just as our circulatory system controls our blood flow, our respiratory system controls our breathing, our digestive system breaks down our food to give us energy, our sensory integrative system takes in the sensory messages from our senses, sorts out and connects the sensations in our brain so that we can use this information for appropriate responses. A well integrated nervous system is necessary for all of us. Without an efficient nervous system, we are not able to interact comfortably with the world around us.

WHEN DOES SENSORY INTEGRATION DEVELOP?

Development begins at conception. Sensory integration is "pre-programmed" to develop in a somewhat predictable sequence. In other words, if all goes according to plan, sensory integrative development takes place, step by step, from infancy through childhood. By about 8 to [illegible] years of age, the [illegible] functions of sensory integration are felt to be [illegible] integrated. However, it is an ongoing process that is constantly being refined throughout our lives.

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WHAT DOES SENSORY INTEGRATION DO FOR US?

This sensory motor foundation equips us for living in two ways:

1) By providing a system for protection or survival.
2) By allowing us to interact and learn from our environment.

HOW DOES SENSORY INTEGRATION DEVELOP?

As mentioned before, sensory integration is pre-programmed to develop from conception. However, it takes sensory experiences or sensory input to activate and/or enhance this process. In other words, it takes sensory input to get this system going. In utero, the fetus is receiving very special information from the uterine environment which helps stimulate the growth of the sensory systems. After birth, the infant is exposed to a variety of stimuli provided through his contact with his family and his environment. Throughout life, we take in, sort out and connect messages from our body and our environment.

WHAT IS THE SENSORY INTEGRATIVE PROCESS?

We will go through a brief overview, step by step, of the sensory integrative process. Figure 1 illustrates this process in diagram form. Some of the terms may be unfamiliar to you, so each one will be explained. Beginning with Block I, let's look at each phase of sensory integrative development.

BLOCK I:

TACTILE: [illegible] [illegible] touch. We have two types of touch receptors or channels in [illegible] body [illegible] called the [illegible] system. This [illegible]

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responds to light or unexpected touch. It helps to alert our body to any stimuli which may be potentially harmful or dangerous to us. It is necessary for the survival of the individual. This is the system that is working when we accidently touch a hot burner and immediately pull our hand away.

The other touch system is the discriminative system. That is, it responds to environmental stimuli so that we can learn or gain information through contact with things in our environment. This system gives us information about the quality of the stimuli. Information such as hard, soft, rough, smooth, velvety, etc. Through this channel we can "feel" the difference between Daddy's rough beard and Mom's soft furry coat.

It is necessary that these two systems be balanced and work together. It is necessary to protect ourselves from harm, on one hand, but interaction is necessary if we are to enjoy and learn from our environment. Therefore, in the sensory integrative evaluation we are finding out:

1) Whether or not the child is uncomfortable with touch.
2) How well the child can discriminate between different types of touch.

VESTIBULAR: In our inner ear lays our vestibular mechanism or balance center. Movement or changing the position of our head, sends messages to this center. It let's us know information about where our body is in space. It gives us information about such things as are we moving or is the room moving? How fast are we going? Are we right side up or upside

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down? If you have ever been to Kings Island, you are probably aware of how your vestibular mechanism responds. In the sensory integration evaluation, we determine whether the child is under or over sensitive to gravity and movement as well as how well the child processes the input from gravity and movement.

PROPRIOCEPTORS: These receptors give us information from our muscles, tendons, legiments, and joints. Therefore, they give us information about the position of our body parts. You don't have to look down right now to "know" exactly what position your legs are in - your proprioceptors keep you informed. In the sensory integration evaluation, we assess the child's internal awareness of his body parts and their positions.

OLFACTORY: Olfactory is the sense of smell. Smells seem to have an effect on our emotions. Whereas, honey or banana may smell "pleasant and good to eat", smoke or gas or posion may smell "unpleasant and harmful".

GUSTATORY: Gustatory is the sense of taste.

VISION: Our eyes "see" for us. Although our visual skills are dependant on our ability to "see", we must be able to understand and comprehend what we see. In addition, we must be able to control our eyes effectively so that we may move our eyes without stress or strain. If our eye mucle control is poor, we may fatigue or skip letters, words, lines, etc., when reading. In the sensory integration evaluation, we assess the childs eye muscle control as well as his visual perceptial skills.

AUDITORY: Audition is the process of hearing. Some people have difficulty with their auditory mechanisms - they do not hear "clearly". Adequate

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auditory processing is an important aspect of our interaction with our environment. Some people are more sensitive to noises than others. This over sensitivity may effect their interactive behavior.

BLOCK II:

BODY SCHEME: Body scheme allows us to "know" the position of each body part, the position of one body part in relation to another and each body part's potential for movement. Body scheme is like the brain's "blue print" of our body. Our brain integrates tactile, vestibular, visual and proprioceptive messages to develop our awareness of our body's scheme. From the evaluation, we can assess whether the child has developed an adequate body scheme on which to plan movement.

REFLEX MATURATION: Reflexes are our most basic and simple motor patterns. They are automatic and predictable movement patterns. One example of a reflex is when a doctor taps your knee with a rubber hammer and your leg automatically extends. Those reflexes with which we are most concerned in sensory integration are the Assymmetrical Tonic Neck Reflex and the Tonic Labyrinth Reflex. These reflexes are normal movement patterns between about 4 to 6 months of age. However, they must become inhibited or over shadowed, if higher level or more complex voluntary movement is to take place. The central nervous system builds voluntary movements based on the raw materials of these reflexes. If these reflexes don't become inhibited or matured, they will have "out lived their usefulness" and interfere with our motor skills. Proprioceptive and vestibular integration help these reflexes to mature so we can effectively move our body against gravity.

In our evaluation, we evaluate the child's ability to assume anti gravity postures.

CAPACITY TO SCREEN SENSORY INPUT: Since our nervous system is constantly being bombarded by sensory input, we evaluate the child's ability to sort out or screen out irrelevant stimuli. This ability to filter out unnecessary input enables the child to focus on a task and respond appropriately to meaningful input.

POSTURAL SECURITY: Postural security is a "feeling" of security when we are moving in space and changing our positions in relation to gravity. Some people are insecure or fearful when they don't have their feet solidly on the ground. Sometimes, we refer to this postural insecurity as being "earth bound". Our sensory integration evaluation reveals whether or not a child is posturally secure.

AWARENESS OF TWO SIDES OF OUR BODY: Man is basically symmetrical - we have 2 eyes, 2 ears, 2 arms, 2 legs, etc.. We must be able to coordinate or use both sides of our body together in a smooth way if we are to be effective in our movements. Once we have a good internal awareness of our two sides, we can "label" them right and left. This is known as laterality. In our sensory integration evaluation, we assess the child's awareness and ability to use two sides of his body together.

MOTOR PLANNING: Motor planning is our ability to "think through" or plan a new motor task. This plan for action is based on our body scheme. We have to "know" how our body parts can move before we can use them effectively. We need the information from touch, from proprioceptors, from vestibular, from vision, etc., in order to regulate or monitor our motor skills. Can you remember the first time you tried to tie your shoe lace? You had to "feel" your way through each step. You relied on your touch, vision, and joint receptors, to help you work through this task. This is motor planning. Once you learned how to tie your shoe lace, it was no longer motor planning, rather acquiring skill or expertise in how fast or how well you could tie a shoe lace. Learning to ride a tricycle, tying shoe laces, using a pencil for writing, skipping, are all examples of motor planning. Motor planning skills are also necessary for organizing the steps of an independent work assignment. In our sensory integration evaluation, we assess the child's motor planning of fine and gross motor coordination tasks as well as his organizational abilities.

BLOCK III:

All of the mechanisms described in Blocks I and II lay the foundation for Block III to develop. It is our sensory motor development or sensory integration which lays the foundation for our perceptual motor skills. We take in, sort out, and connect sensory information to use for the development of perceptual motor skills.

EYE HAND COORDINATION: Eye hand coordination requires adequate eye muscle control and well developed grasp. It is necessary for skill in using a pencil or catching a ball.

OCULOMOTOR CONTROL: Eye muscle control allows us to use our eyes effectively in following across a printed page.

POSTURAL ADJUSTMENTS: Postural adjustments allow the child to put his body in appropriate positions so that he can engage in fine and gross motor tasks.

AUDITORY LANGUAGE SKILLS: Auditory language skills provide the foundation for understanding spoken words and being able to use speech effectively to interact with other people.

VISUAL SPATIAL PERCEPTION: Visual spatial perception is our own awareness of form and space, as well as understanding relationships between forms in our environment. Our own body serves as our frame of reference for determining directions. If we are aware of our own body and its right and left side, then we can project right and left environment. This is called directionality. Our directionality is our basis for our sense of direction. The differences between "b" and "d" is an example of space perception. The difference between "b" and "m" is an example of form perception. Other types of form and space concepts that we are evaluating are figure ground (or being able to pick out a stimulus from a rival background) and visual sequential memory (or remembering symbols in a particular sequence or pattern). In general, our form and space perception lays our foundation for concepts such as: in front of, behind, under, next to, etc.. Also, out math concepts such as: more than, part of, less than etc., are all based on our form and space perception.

ATTENTION CENTER FUNCTIONS: During our evaluation, we asses the child's ability to screen out unnecessary stimuli. Difficulty in this area may relate to behavioral problems such as hyperactivity, distractability, and short attention span.

BLOCK IV:

Learning and emotions are functions of our brain. If the brain develops the capacity to perceive, integrate, remember and motor plan, the ability can

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then be applied towards the mastery of all learning and related tasks, regardless of a specific content. This capacity to "learn" is based on adequate sensory integration. Sensory integration provides a foundation on which to develop perceptual motor skills, which in turn, provide a basis for academic learning, emotional social adjustments and activities of daily living. It is imperative that we keep in mind that this "capacity" for learning refers to our automatic functions rather than intelligence or intellectual ability per se.

ACADEMIC LEARNING: Academic learning involves two complimentary processes. We must have the mechanics or tools for learning as well as the conceptual ability for learning. Both of these processes must work automatically and run automatically.

Some examples of those mechanics or tools that we need for learning would include:

1) Using our eyes together in a smooth manner to follow a horizontal line for reading.
2) Having the necessary eye-hand coordination that allows us to use a pencil effectively for writing skills.
3) Having the necessary form and space perception that allows us to learn our letters, numbers and words.
4) Having the visual sequential memory that allows us to remember symbols and letters in a particular order as needed in spelling.

5) Having the visual spatial perception that allows us to learn math concepts.

When these mechanisms or tools are not automatic, we try to "get by" by thinking through the task, but we spend a lot of "energy" that could be used for conceptual learning. In addition, it is very frustrating to "labor" over these functions which should be automatic. This frustration often is exhibited as negative behavior.

Abstract thinking or conceptualization of ideas is critical to academic learning. Our ability to take in, sort out and connect sensory information to form meaningful concepts reflects our capacity to learn. Figure 2 illustrates this process quite simply. We perceive the stimuli such as red, round, hard, fruity smelling, etc., through our appropriate sensory systems. We integrate or relate these senses to form percepts such as red, round, red and hard, etc., then we have the capacity to organize these percepts to develop a concept = apple.

ACTIVITIES OF DAILY LIVING: Activities of daily living refers to those activities such as eating, dressing, grooming, playing and school work which are expected of a child at his particular age. Mastery of such tasks requires adequate sensory integrative functions.

BEHAVIOR: Sensory integration provides the input for the development of emotional stability, sound judgment and the ability to form meaningful and personal relationships. Many "behaviorial problems" may be directly or indirectly related to the child's sensory integration dysfunction. Some of the common characteristics seen are:

1) Easily frustrated by failure.
2) Poor self image.
3) Inability to establish and maintain friendships with children his own age.
4) Disrupts classroom behavior.

The child's behavior and emotional social adjustments are strongly influenced by his ability to relate with his environment.

We hope that this booklet has given you some insight into the development and importance of sensory integration. The key to understanding sensory integration and hence sensory integration dysfunction is to remember that our sensory integrative development allows us to relate to our world in an easy, meaningful, and automatic manner - physically, academically and emotionally.

SENSORY EXPERIENCES FOR THE PRESCHOOL CHILD

As young children learn many new things through their senses, we believe sensory stimulation to be an important part of our program. Below is a brief description of some activities that we do in school with common materials and have found very successful. For convenience, the activities are arranged according to the primary sense used in the activity, but one activity usually uses more than one sense.

VISUAL

1. Using a flashlight in a darkened room (or under a table covered with a blanket) move the light in different patters for the child to follow. Shine the light on various body parts and have the child identify them. Shine the light on common objects and encourage the child to identify. Move the light rapidly and have the child try to catch the light beam.

AUDITORY

1. Child can be given any object to hold that will make noise when shaken. Using the words "noisy" and "quiet" encourage the child to shake his/her object accordingly to the command you give, as soon as you say "noisy" or "quiet."

2. Hide objects behind you back and shake them. As the child to guess what is making the noise.

3. Permit the child to make and decorate his/her own noisemaker by placing beas or rice in a paper cup and taping another cup on top of it. Streamers can be added. As the child is shaking the object, talk to him/her about loud, soft, fast, slow, noisy, and quiet.

4. Children enjoy being members of a "kitchen bank" here at school. From a pile of kitchen utensils of all types, the child can select any object he/she desires for his/her instrument. It is very interesting to see/hear the different noised the child can make with the same utensil. The child enjoys the activity because he/she is familiar with what he/she has selected.

SMELLING AND TASTING

1. On a piece of paper, allow the child to shake spices, one at a time after the paper has been moistened. Encourage the child to move his/her hands on the paper to spread the spices and to small his/her fingers as he/she spreads each spice. Different flavors of jello powder may also be used and usually makes a prettier picture when finished. Child may also taste his/her fingers as he/she paints.

2. Blindfold the child and let him/her smell different foods which are familiar to him/her. If he/she guesses the food, he/she may be permitted to taste it.

FEELING

1. Wrap a common object in newspaper and tape. Ask the child to guess what's inside. Child may unwrap the paper to find the answer.

2. Permit the child to whip dish detergent, food coloring, and water with an egg beater. Child can then feel bubbles, grab a handful and place them on a paper. As the bubbles break on the paper, they create a colorful design.

3. In a small drewstring bag or box into which holes have been cut to place the hands, place a few common objects. Ask the child to reach in (no peaking) and find the object that you ask him to find or have described. (ie: find the thing we brush our teeth with.)

4. Clown Face—with dream whip, children can be encouraged to look in a mirror and decorate their own faces as they talk about the body parts they are touching. It is even more fun to decorate a friend's face (with a little adult supervision).

5. As the children seem to enjoy the good feeling of being barefoot, we make a special texture course at school when they are shoeless. We select various textures found in the classroom (plywood, carpet squares, corrugated cardboard, egg cartons, large pieces of thick foam, textured vinyl, sandpaper strips, etc.) and place them end to end, making a "feel road." Some children enjoy playing the game blindfolded. Any available textures can be used to play the game.

6. Children never seem to tire of fingerpainting. However, we like to use materials other than paint—materials that have a special feel, smell, taste, and look. The smaller children enjoy just moving their hands in the substance while we practice drawing shapes, faces, letters, etc. with the older children. Some of the substances we use for fingerpaints are:

    - colored dream whip
    - colored sand
    - peanut butter and jelly
    - cooked cereal
    - icing
    - gravy
    - colored applesauce
    - mud
    - shaving cream
    - handcream

Cognitive-Perceptual Motor Functions and Suggested Developmental and Remediation Activities

CPM* FUNCTIONS	Developmental Activities
Tactile Discrimination	
Ability to tell differences and recognize objects by touch.	Sand play Sand paper numbers Texture boxes Play doh Fingerpainting Textured objects, letters and numbers on cards
Orientation in space	
Ability to know where you are in relation to other objects in space, to know left and right.	Rolling over Obstacles course on hands and knees Barrel rolling Scooter board games Stepping stones Giant beach ball activities Identifying body parts Looby loo Simon says Human figure puzzles Worksheet exercises for left right orientation Chalkboard bilateral circles
Gross Motor Coordination	
Ability to use large muscles, arms legs and trunk smoothly	Walk a line Walk a rail Jump rope Hopping Skipping Jumping Catching Throwing Circle ball games Pass the ball games Clown punching bag Sliding

Eye-hand Coordination and Control

Ability to use small muscles, eye and hands to work together

- Eye exercises
- Perceptual training forms
- Stencils
- Patterns to trace
- Tracing exercises
- Coloring
- Copying
- Cutting out objects
- Cutting out pictures from magazines
- Hammer-nail design sets
- Pounding bench
- Rubber peg boards
- Pop-it beads
- Beads-to-string
- Jacks
- Ball in a basket games
- Scribbling
- Drawing

Visual Perception

Ability to recognize objects to tell differences in objects that are similar, to match objects that are the same and to remember objects when seen again in a different place.

- Dolch object cards
- Picture sheets
    - One object
    - More than one
    - Many
- Visual discrimination work sheets
- Matching work sheets
- Object cards
- Magnet board

Auditory Perception

Ability to recognize sounds, to tell differences in sounds that are similar to match sounds that are the same and to remember sounds when heard again in a different place.

- Rhythm band instruments
- Tape recorded sounds
- Sound cylinders
- Tape recorded discrimination activities
- Listening games
- Rhyming activity sheets
- Phonic activity sheets
- Nursery rhymes (may be put on tap or use records)
- Short stories
- Longer stories

Orientation in Time

Ability to understand concepts of now later before and after as well as seasons weeks months and learning to tell time.	Calendar Days of the week Current month Months of the year Seasons work sheets Clock Tell-time quiz-mo.

Non verbal Integration

Abillity to organize concrete objects into meaningful wholes	Graded jig-saw puzzles Magnet board Paper mosaics

Symbolic Integration

Ability to organize ideas and catagorize objects	Work sheet activities Lotto games Grouping like objects

Linguistics Input

Ability to understand spoken language	Direction activities Taped Mimeod

Linguistics Output

Ability to use spoken language in an organized manner	Pictures to tell stories about with a beginning, middl and end Beginning stories on tapes, endings supplied by children Telling stories about everyday events Seequees puzzles

Remediation Activities

Create stories from experience
Use words from these stories for spelling
Use stories for reading
Phonics activities
Worksheet workbook and textbook work for each child
Scrapbooks
Grow grass seed, potato plants

SCOOTER GAMES TO HELP SENSATIONS

1. Lying on stomach, on scooter, push off from the wall and coast. Try this with eyes closed. Try this lying on back.

2. Push off from the wall and coast between two cardboard boxes without touching them. Use hand on floor for guidance. Try it with eyes closed.

3. Push off from the wall and touch over-hanging rope. Try it with eyes closed, noting position of rope.

4. Push off from the wall with hands or feet. Slap or kick a hanging ball. Try doing this feet first or head first and with eyes closed.

5. Sit on the scooter and turn around using feet to propel self. First go in one direction and then in the other. Try doing this using only one hand and then the other.

6. Sit on scooter with one hand on the floor. Pivot around hand, using. both feet, then one foot, then the other. Go in one direction and then the other.

7. Lie on stomach, on scooter, and push self through a forest of cardboard boxes. Try it with a paper sack over the head to hide vision. Feel your way through the boxes with hands.

8. Lie on back, on scooter, and push self past a barrel. Throw a ball or other object into the barrel as you pass. Try going feet first and then head first.

9. Stretch a rope between 2 points about one foot off the floor. Lie on stomach, on the scooter, and "ferry" from one end of the rope to the other, pulling hand over hand. Try it lying on back and with eyes closed.

10. Sit on scooter and pull self hand over hand with a rope stretched ovehead. Go forward, backward and with eyes closed.

11. Two children lie on their stomach, on the scooters. Push off and pass each other touching hands. try it again clapping hands and pivoting around them.

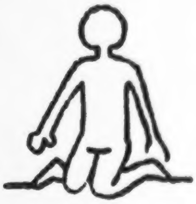
12. Set up obstacle course with cardboard boxes. Ride through the course on the scooter. Try it with eyes closed and not knocking boxes over.

13. Have the child lie on his stomach, on the scooter, and hold a short rope. Swing the child by the rope. Try holding the rope with feet while lying on back.

Sitting on Floor: For group or individual activity.

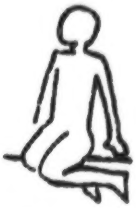
avoid

"W" sitting



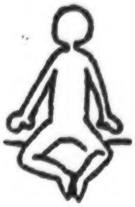
(Avoid)

Side sitting

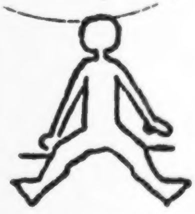


Unassisted ___
Assisted ___

Ring sitting

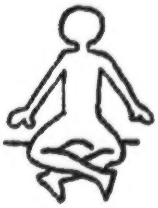


Unassisted ___
Assisted ___



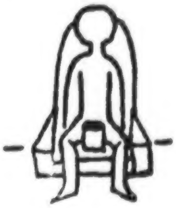
Spread

Unassisted ___
Assisted ___



Tailor-Sitting

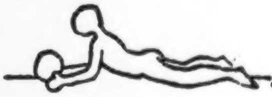
Unassisted ___
Assisted ___



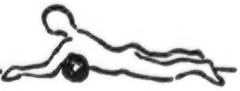
Floor seat

Comments:

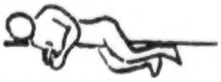
Lying on Floor (To play or hear story on mat.)



Without support



Over chest roll

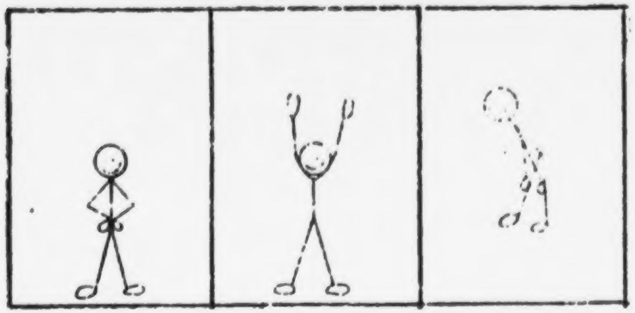


Side-lying to get both hands together

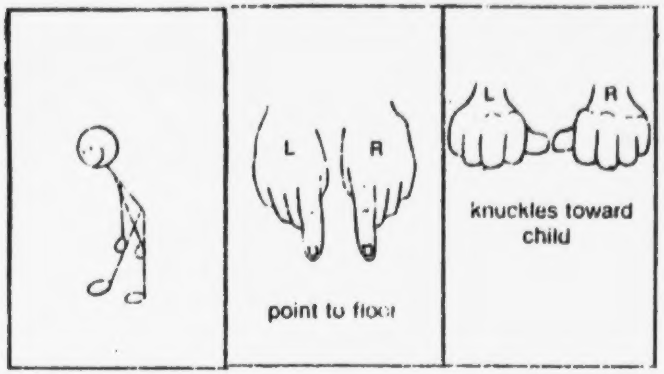
Comments:

[illegible]

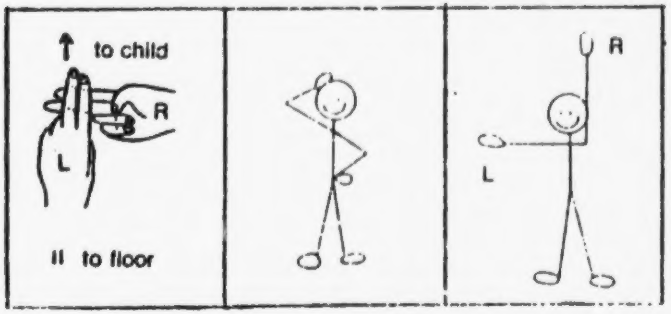
age 1



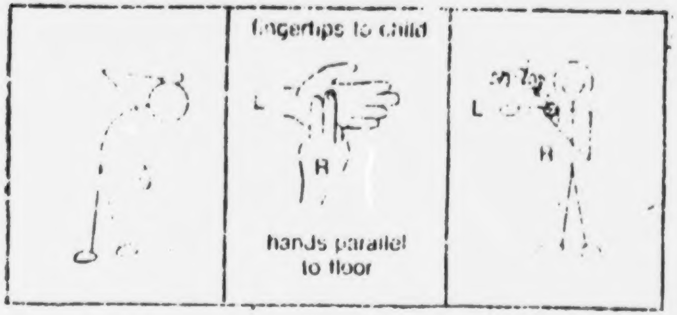
age 2


L
R
point to floor
L
R
knuckles toward child

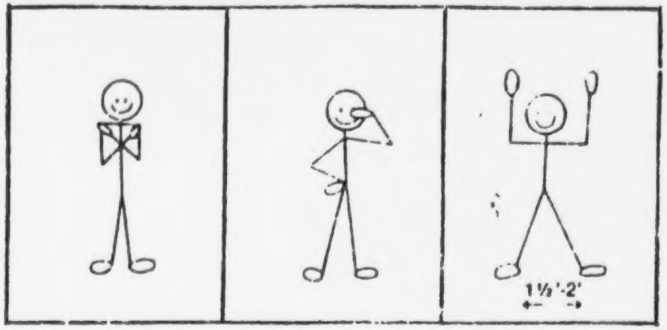
age 3


↑ to child
R
L
II to floor
R
L

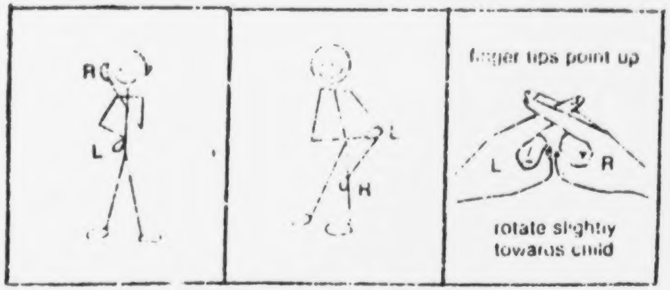
age 4


fingertips to child
L
R
hands parallel to floor
L
R

age 5



age 6


R
L
L
R
finger tips point up
L
R
rotate slightly towards child

APPENDIX E

INSERVICE DOCUMENTATION

August 3, 1986

Betsy Revelj
Physical Therapist
884 Gardenia Lane
Plantation, FL 33317

Dear Ms. Revelj:

Thank you for agreeing to participate as a speaker for the October 25 workshop at , South Campus. Your session(s) is (are) scheduled from 10:40 to 12:00 a.m.

Attached are three items: Consultant Agreement Sheet, Expense Voucher, and Consultant Evaluation Form. Please complete the Consultant Agreement Sheet immediately and return to the FDLRS office. Following the workshop, complete the other two forms and return to our office for processing.

Please contact me at if you have any questions. I am looking forward to seeing you in October.

Sincerely,

Chairperson, Inservice Subcommittee
Interagency Committee

EB:cm
Enclosures

cc , Director, Child Care Program
Community College

COMMUNITY COLLEGE
SOUTH CAMPUS
Continuing Education/Community Services

Presents

PRESCHOOL CHILDREN WITH SPECIAL NEEDS
SATURDAY, OCTOBER 25, 1986

7:45 a.m. - 8:15 a.m.	Sign-in (Mass Media Room)
8:15 a.m. - 8:30 a.m.	Welcome and Introductions
8:30 a.m. - 9:00 a.m.	**Keynote:** The Challenge of Working with Special Needs Children
9:10 a.m. - 10:30 a.m.	1. Speech and Language Development 2. Behavior Management 3. Mainstreaming Special Needs Children: Issues and Concerns 4. Toilet Training
10:40 a.m. - 12:00 Noon	1. Music, Rhythms and Activities for Special Needs Children 2. Behavior Management (REPEAT) 3. Infant Stimulation 4. Developing Motor Skills in Pre-School Children
12:00 Noon - 1:00 p.m.	**LUNCH ON YOUR OWN**
1:00 p.m. - 2:20 p.m.	1. Working with Children with Learning Problems 2. Demonstration of Recycled Materials 3. Facts about Infectious Diseases
2:30 p.m. - 3:40 p.m.	1. Demonstration of Recycled Materials (REPEAT) 2. Pre-School Screening 3. Working with Families of Special Needs Children

OR (Instead of 1, 2, 3 sessions in p.m.)

1:00 p.m. - 3:40 p.m.	Creative Responses to Conflict (2 hours, 40 minutes)

IN ORDER TO RECEIVE INSERVICE CREDIT FOR THE 1986-87 YEAR, PARTICIPANT MUST ATTEND THE FULL DAY

PRESCHOOL INTERAGENCY COUNCIL
Serving Ages Birth to Five

PRESCHOOL INTERAGENCY COUNCIL MEETING
February 17, 1987

The meeting was called to order by the chairperson and introductions were made.

The guest speaker was Betsy Revely, physical therapy consultant at an Early Intervention Program. She spoke on identifying learning disabilities in preschoolers. She discussed the Sensory Integration process and the Miller Assessment used for evaluating preschoolers. She distributed hand-outs on these subjects and other related information.

from PIC attended the meeting is one of three pilot project counties. She announced they are developing procedures for case conferencing on individual handicapped preschooler cases. A team of professionals will evaluate certain involved cases and make appropriate referrals. There will be four screening sites within the county. One site is being proposed as a specialized diagnostic team center.They are developing the necessary forms and procedures for professionalism and confidentiality.

INSERVICE & CONFERENCE CHRONOLOGY

CHRONOLOGY		INSERVICE AND/OR PRESENTATION →	TEACHER THERAPIST CONFERENCE →
AUG 1986	BEGAN RESEARCHING SERVICES & NEEDS RE LD PREACADEMICALLY IN THE COUNTY.		
OCT 8, 1986	IMPLEMENTATION BEGAN		
OCT 25	- WORKSHOP SPEAKER BEGAN TESTING PERIOD FOR CHILDREN SETTING UP ON SI PROGRAMS NOV, DEC & JAN	✓	
DEC 10	- INSERVICE PRESENT & PRETEST ASC TEACHERS.	✓ ASC	
DEC 19	- ALL POTENTIAL CHILDREN TESTED & SET UP PROGRAMS.		
JAN 7 THRU FEB 18	INSERVICED STUDENT OT IN DAILY PROGRAM CARRYOUT & OT SUPERVISOR AT ASC - CONFERENCED WEEKLY CONTINUED MEETINGS & CONF. EVERY WED. 1/7; 1/14; 1/21; 1/28; 2/4; 2/11; 2/18; 2/25		8 ASC SESSIONS
JAN 14	- MEETING c̄ 2 TEACHERS, PT & OT EXPLAINING & OUTLINING EACH CHILD'S SI PROGRAM & APPROPRIATE CLASSROOM ACTIVITIES - + MEETING c̄ OT, PT & COTA RE PROGRAM PROGRESS.		1 ASC
JAN 16	- MEETING c̄ PT, COTA & SPTA REGARDING SI PROGRAMS FOR EACH ARC PRESCHOOLER & APPROPRIATE CARRYOUT OF PROGRAM. WEEKLY CONFERENCES (INFORMAL) OBSERVATION OF SESSIONS WERE HELD EVERY MON. OR FRI. BY PT c̄ SPTA AND/OR SUPERVISORS THRU 4/22/87		1 ARC 13 ARC SESSIONS
JAN 20	- INSERVICE, PRETEST TEACHERS AT ARC RE SI & PLANNED PROGRAMS	✓ ARC	
JAN 23	- TEACHER CONFERENCES INDIVIDUALLY 1 HOUR/SESSION		2 ARC
JAN 30	- " " " " " "		2 ARC

CHRONOLOGY CONT'D		INSERVICE AND/OR PRESENTATION	TEACHER THERAPIST CONFERENCE
FEB 4	- MEETING c̄ OT, PROGRAM IMPLEMENTOR (JL) & PT AT ASC; WEEKLY CONFERENCES & REVIEWED ALL PROGRAMS & MADE APPROPRIATE CHANGES. 2/4; 2/11; 2/18; 2/24; 3/11; 3/18; 3/23; 4/8, 4/22		9 ASC SESSIONS
FEB 17	- PRESENTATION TO THE COUNTY INTERAGENCY COUNCIL	✓	
MAR 24	- PRESENTED MAP TO NOVA FAMILY CENTER PERSONNEL.	✓ NOVA	
MAR 25	- ARC CHILDREN PROGRESSING WELL; TESTED PROGRESS & REVISED ACTIVITIES c̄ SPTA		✓ ARC
APR 21	- DISCUSSED PRESCHOOL LD POTENTIAL OF 3 CHILDREN AT BCC c̄ SOCIAL WORKER, TEACHERS, ETC. TESTED 1.		✓ BCC
APR 22	- SPTA PRESENTED RESULTS & CLASSROOM RECOMMENDATIONS TO TEACHERS, SUPERVISORS & THERAPISTS	✓ ARC	
APR 24	- TEACHER/THERAPISTS CONF. INDIVIDUALLY REGARDING CHILDREN'S CLASSROOM CARRYOVER.		2 ARC
MAY 4	- SET UP CARRYOVER PROGRAMS c̄ PT & COTA AT ARC		✓ ARC
MAY 11	- RECHECKED CARRYOVER & CONF. c̄ THERAPISTS.		✓ ARC
MAY 26	- TEACHER CONF. RE CHILD'S SI NEEDS		✓ ARC
MAY 29	- " " " 2 CHILDREN'S SI NEEDS (2 HR/SESSION)		2 ASC
JUN 2	- TEACHER CONF. RE PLACEMENT & INSTRUCTED THERAPIST IN TESTING	3 ARC	1 ARC
JUN 2 & 8	- SOCIAL WORKER CONF. RE PLACEMENT 3 CHILDREN		2 ARC
JUN 1 & 9	- CURRICULUM SPECIALIST/SUPERVISOR RE 3 CHILDREN'S PLACEMENT		2 ARC

CHRONOLOGY CONT'D		INSERVICE AND/OR PRESENTATION	TEACHER THERAPIST CONFERENCE
JUN 2, 8, 9	- TEACHER CONF. RE 5 CHILDREN C̄ SI NEEDS		3 ARC
JUN 3	- POST TEST & INSERVICE AT ASC	✓	
JUN 8	- PT & SPTA CONF. RE CHILD'S SI NEEDS		1 ARC
JUN 16	- POST TEST & INSERVICE AT ARC	✓	
JUN 17	- INSERVICE PT & OT AT ASC IN TEST & ADMINISTRATION (2 HOURS)	✓	

APPENDIX F

SESSION FORMAT AND DOCUMENTATION

SESSION FORMAT :

① SET UP & DEFINE AREA & PLAN DAILY ACTIVITIES.

② GET CHILD (CHILDREN).
DO MEMORY TASK ON WAY TO P.T.
AND MOTOR PLANNING TASK ON ENTERING P.T.
(e.g. STAIRS, BALANCE BEAM, OBSTACLE COURSE).

③ TACTILE ACTIVITY
④ VESTIBULAR ACTIVITY
} ORDER NOT IMPORTANT AND/OR CAN BE COMBINED INTO ONE EXPERIENCE.

⑤ PROPRIOCEPTIVE AND/OR COORDINATION ACTIVITY.

⑥ GIVE REWARD.

⑦ REPEAT ② MOTOR PLANNING ACTIVITY AS
LEAVE P.T. DEPARTMENT.

⑧ MEMORY TASK AS RETURN CHILD TO CLASSROOM.
REVIEW SESSION ACTIVITIES IN PROPER
SEQUENCE, i.e. "FIRST WE WALKED
TO P.T., THEN YOU WENT ON THE
BALANCE BEAM ---".

⑨ FILL OUT DATA SHEET.

DATA SHEET

Date: Jan 1987 Name of Student: Fr Paired w/ J.

Name of Therapist/Teacher: Mary / Penny → teacher

Physical Play Game(s):

Games:
1. talk about activities, climb up ladder & slide down slide
2. spin on hammock, James rocking in boat
3. rocking in boat with James
4. twister spin identify color & then go stand on that color dot
5. tactile discrimination - bag w/ penny, sticker, & candy in it.
6. talk about activities, climb up ladder & slide down slide

Date	Exercise Games Done Today	Initial When Done	Comments
1/15/87	1,2,3,4,5,6	mL	Have to work on Listening to instr: uctor. Otherwise did very good. 1/15/ 1/16/87 Frankie worked much better today, listened to instructions better. 1/22/87 · Frankie did a great job on tactile discrimination today. He does better on the twister game when he is given a [illegible] after every correct answers. 1/23/87 · Frankie did a good job again today w/ tactile discrimination, and twister. He does not like staying on the swing very long. 1/26/87 Frankie enjoyed things today. He is following instructions much better. He did not have to hard of time getting used to the new texture & shape in the discrimination game. 1/27/87 · Frankie worked well w/ everything today 1/28/87 · Frankie worked very well today. He does not get
1/16/87	1,2,3,4,5,6	mL	
1/20/87	absent	mL	
1/21/87	absent	ms	
1/22/87	1,2,3,4,5,6	ms	
1/23/87	1,2,3,4,5,6	ms	
1/26/87	1,2,3,4,5,6	ms	
1/27/87	1,2,3,4,5,6	ms	
1/28/87	1,2,3,4,5,6	ms	
1/29/87	absent	ms	
1/30/87	went on a walk w/ class	ms	
2/2/87	Absent	ms	
2/3/87	1,2,3,4,5,6	ms	
2/4/87	therapist at school	ms	
2/5/87	Absent	ms	
2/6/87	1,2,3,4,5,6	ms	
2/12/87	1, 2, 3, 4, 5, 6		
2/18/87	1, 2, 3, 4, 5, 6		

DATA SHEET

Date: 2/25/87 Name of Student: [redacted]

Name of Therapist/Teacher: AL [redacted]

Physical Play Game(s):

Games
1. See top sheet
2.
3.
4.
5.

Date	Exercise Games Done Today	Initial When Done	Comments
2/25/87 (continued)	1,2,3,4,5,6	AK	pulled straps off voluntarily climbed up on platform himself but backed away from barrel & even tho I attempted peek-a-boo game at one end of barrel placed stuff toys in " & offered M&M's at other end to no avail. Twister game successful. Frankie identified all colors correctly using hand as "pointer" instead of hands or feet
3/27/87 AK			Because his class was ready to go on outdoor walk Frankie physically & verbally refused to go with me to therapy even tho his teacher & teacher aides told him they would wait for him & made no attempt to "coerce" him
4/1/87 AK	1, 2, 3, 4, 5, 6		This time Frankie eagerly followed me [illegible]

DATA SHEET

Date:

~~Name of Student:~~ [illegible] J 4/1/87

Name of Therapist/Teacher:

Physical Play Game(s):

Games
1. walk down foot placement ladder
2. open in hammock – other child gets out then to go
3. kick ball back & forth using [illegible]
4. twister game – continue as scheduled
5. tactile follow-up [illegible] as scheduled
6. talkabout activity & repeat 1st activity [illegible] placement ladder.

add Pieces & [illegible]

Date	Exercise Games Done Today	Initial When Done	Comments
4/3/87	1,2,3,4,5,6	AK	Frankie walked out of class with me & I told him we were going to play some new games today. Although I modeled walk with alternate rt. & lft. feet down the placement ladder when I asked Frankie to follow suit he only walked down the rt. side of the ladder & also stepping in each window. Then he went to the slide (his [illegible] activity) climbed up & slid down in the prone position. On the hammock I could not persuade him to lay down. Even tho I swapped him in the [illegible] he sat sitting up. I only swung him a few times & then had him get out. Twister game – utilizing colors (M&M's for motivation) he properly identified all colors, contin

DATA SHEET

Date: 4/22/87 **Name of Student:** F

Name of Therapist/Teacher: AL K

Physical Play Game(s): See cover sheet of 4/1/87

Games 1.
2. ↑
3.
4.
5.

Date	Exercise Games Done Today	Initial When Done	Comments
4/22/87	1,2,3,4,5,6	AK	With an assist from Amy we finally were able to demonstrate correct procedure of alternate feet on the placement ladder even tho it meant physically directing Frankie's feet. Spin in hammock was routine altho Frankie initially likes to lie on stomach before we persuade him to lay on his back. He still likes to pick up the ball by hand before he ~~wi~~ will put it down to kick it. He actually ~~hel~~ held the ball in his hand at one point & attempted to kick it out of his hand & on second attempt succeeded. He set up the water game by himself & was totally successful in all areas of identification [illegible] tactile discrimination-he

1st session = 111 [illegible]
# of sessions [illegible] = 25

DATA SHEET

DATE: 5/12/81 NAME OF STUDENT:

Name of Therapist/Teacher: [illegible] [illegible] [illegible]

Physical Play Game(s):

Games:
1. feet placement ladder, [illegible]
2. [illegible] [illegible]
3. [illegible] ball
4. Twister game
5. tactile [illegible]
6. [illegible] #1

DATE	EXERCISE GAMES DONE TODAY	INITIAL WHEN DONE	COMMENTS
5/12/81	[illegible] + stair climb + jump	ER	enjoyed activities [illegible]

APPENDIX G

DATA COMPILATIONS

*Leading [illegible] (XOT)

Student Characteristics

TSI = test of sensory integration
MAP = Miller Assess Preschoolers

ARC	Total # of Sessions	Pre test	Post Change	Pre term [illegible]	Prenatal [illegible]	[illegible] Mother	Age [illegible] Suspect	AGE @ PRETEST	Recomm.	
[redacted]	16	MAP	[illegible]	[illegible]	[illegible]	[illegible]	3y [illegible]	4y 9mo	[illegible]	+ [illegible]
[redacted]	19	MAP	+4 [illegible]	yes 33 [illegible]	yes	some [illegible]	birth	3y 10mo	[illegible]	+
[redacted]	22	MAP	-1	no [illegible]	no	no	[illegible]	4y 1mo	ARC [illegible]	[illegible]
[redacted]	21	MAP	+1	no [illegible]	[illegible] 3 [illegible] FTT	no [illegible]	3 mo FTT	4y 4mo	[illegible]	(good)
[redacted]	16	MAP	+4 WNL	yes [illegible]	yes	yes	birth	4y 1mo	[illegible]	+
[redacted]	23	MAP	+3 [illegible]	no [illegible]	yes	yes	1 yr	4y 5mo	[illegible]	+ (good)
[redacted]	17	MAP	MAP +1 [illegible]	no [illegible]	no	[illegible] 1/85	1/85 [illegible]	4y 1mo	ARC [illegible] PT/OT/ST	
[redacted]	19	MAP	+3 [illegible] WNL	28 wk	yes	yes	10 mo [illegible]	4y 7mo	[illegible]	[illegible] (good)
[redacted]	17	MAP	+5 [illegible] WNL	yes [illegible] 26 wk	[illegible] yes	yes	birth	3y 2mo		+
								37-10 4y2		
ASC										
[redacted]	25	~~MAP~~ [illegible]	MAP [illegible]	[illegible] 6½ mo [illegible]	yes	yes	birth	3y 11mo	[illegible]	+
[redacted]	22	~~MAP~~	MAP [illegible] +6	[illegible] post 7½ lbs	[illegible]	n/o	[illegible]	3y 2mo	-	
[redacted]	27	TSI	+1	not known	not known	yes	10/87 [illegible]	11/30/87 3y 8mo	-[illegible]	
[redacted]	33	MAP TSI	+3	32 wks	yes	no	birth long delay	[illegible] mo		
[redacted]	31	TSI	+7	N 10-10 [illegible]	no	no	10 mo [illegible]	3y 2mo		
								17 [illegible] 3y 6m		
=9	308 x̄=22									
1 [redacted]	30	Hoskins [illegible]	[illegible]	N	[illegible]	[illegible]	[illegible]			

S.I. Session Documentation & Scheduling

ARC Preschool. 18 weeks

n = 9

Mon 9 AM [redacted] (Susan) 1/30 2/18 2/23 3/2 3/11 3/6 3/28 3/30 4/8 5/21 absent 1st ret
10 AM [redacted] (Nancy) 2/2 2/9 2/15 2/25 3/2 3/9 3/16 3/23 3/30 4/5 → 4/24 Ret
10:30 [redacted] (Susan) 2/2 2/9 2/18 2/23 3/4 3/9 3/16 3/23 3/30 4/6 → 4/22 Ret 5/13 5/27
11:00 [redacted] (Susan) 1/28 2/4 2/18 2/23 3/2 3/9 3/16 3/23 4/6 4/20 4/29 5/20 5/25 6/16 Ret
2:00 [redacted] (Bud) 2/4 2/13 2/23 3/4 3/9 3/16 3/23 4/10 4/20 → 6/2 ret
Wed: 9:AM [redacted] (Bud) 2/4 2/13 2/23 3/4 3/9 3/28 3/25 4/1 4/6 4/20 4/27 5/13 5/20 6/3 6/2 ret 6/10
10:00 [redacted] (Freddie) 2/4 2/23 3/2 3/9 3/11 3/18 3/25 3/30 4/6 4/20 → 5/27 ret
10:30 [redacted] (Susan) 1/28 2/4 2/23 3/4 3/11 3/18 3/27 4/1 4/6 4/22 4/24 Ret
11:00 [redacted] (Susan) 2/2 2/9 2/23 3/4 3/11 3/18 3/25 4/1 4/6 → 6/8 Ret

121
Total # of Rx Sessions

Ind	+ Sm Grp	Tot
10	6	16
10	9	1
13	9	[illegible]
13	5	21
9	7	16
15	8	[illegible]
10	7	17
10	9	19
9	5	17

Fri. Movercise

[redacted] 1/30 2/20 2/27 3/27 4/10 5/15 5/22 5/29 6/5
[redacted] 1/30 2/20 2/27 3/27 4/10 5/15 5/22 5/29 6/5
[redacted] 2/20 2/27 3/27 4/10 5/15 5/22 5/29 6/3
[redacted] 1/30 2/20 2/27 3/27 5/15 5/22 absent →
[redacted] 2/20 2/27 3/27 4/10 5/15 5/22 5/29 6/5
[redacted] 1/30 2/20 2/27 3/27 4/10 5/15 5/22 5/29

Movercise.

[redacted] 1/30 2/20 3/27 absent 5/15 5/22 5/29 6/5
[redacted] 2/20 3/27 4/10 5/15 5/22 5/29 6/5
[redacted] 1/30 2/27 3/27 4/10 5/15 5/22 5/29 6/5

ASC Preschool (n = 5 + Lan

Total Sessions

[redacted] 2/11 → 5/12/87 = 23 total sessions of [illegible] ation & tactile 23
[redacted] 1/15 → 6/10/87 = 30 " " + re /10/87 30
[redacted] 1/15 → 5/26 = 31 " " + ret /10/87 31
[redacted] 1/15 → 5/25 = 33 " " + ret 27/87 33
[redacted] 1/15 → 5/26 = 27 " " + ret /10/87 27
[redacted] 1/15 → 5/12 = 22 " " + ret /29/87 22
[redacted] 1/15 → 5/12 = 25 " " + ret /29/87 25

Teacher Pre & Post Test Scores
5 questions, discarded 1 = misleading #5

ASC 6 took both : 3 stayed same { exposed for several years to PT plans for 1 year }
2 improved score
1 decreased score (1 pt)

1 took pretest = 27 correct answers (35 possible) 77%
9 took post = 36 " " (45 possible) 80%

ARC 9 took both : 6 stayed same | Pretest
3 improved | (75) 34/45 (88) 40/45
0 decreased
13 took pretest {51 correct answers (65 possible) 78%
12 took post (52 answers (60 possible) 87%

Dates* ASC Pretest & Inservice = 12/10/86 = 6 mo interval
Posttest & Inservice = 6/3/87

ARC Pretest & Inservice = 1/20/87 = 5 mo interval
Posttest & " 6/16/87
+ Inservice re Program of Children & suggested activities & handouts 4/22/87

Pretest: n = 20, 100 possible → 7 pts scored → 1%
Posttest: n = 21, 105 " → 8 pts scored → 8%

Miller Assessment For Preschoolers

Record Booklet

SAM COPY

CHILD'S NAME: [redacted]

FAMILY CONSTELLATION: names and ages

Mother:

Father:

Siblings:

Address:

Teacher = Susan

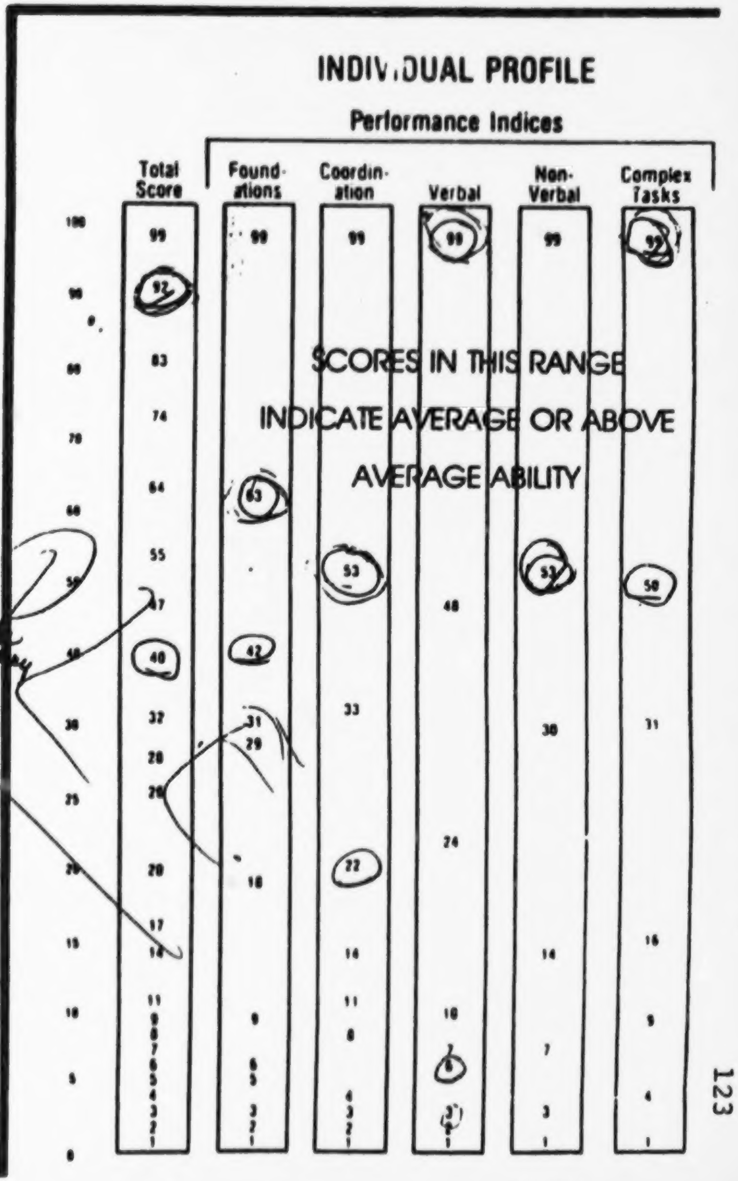
Phone: H) Mo-W) Fa-W)

switched handedness – Left = more refined, tighter & intense than Rt, tendency to prefer left
release of grasp & slow & fatigued
exp. with right hand

	Year	Month	Day
D.O.E.	86	12	19
D.O.B.	83	10	1
C.A.	3	2	12 → 3y 2 mo

— DOE #2, 6/8/87; CA = 3y 8 mo

Final Recommendation: 1- Coordination activities
2- object identif = stereognosis & diff sorting
3- motor planning – esp. eye foot eg stamping & twister (use colours) games



The Foundation for Knowledge in Development,
1901 West Littleton Boulevard, Littleton, CO 80120

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PERFORMANCE INDICES

R = # Red/
Y = # Yellow

	Sensory & Motor Abilities		Cognitive Abilities		Combined Abilities
	R Y 0 / 2 FOUNDATIONS INDEX 42%	R Y 1 / 0 COORDINATION INDEX 22%	R Y / 1 VERBAL [illegible] 6%	R Y 0 / 1 NON-VERBAL INDEX 53%	R Y 0 / 1 COMPLEX TASKS INDEX 58%
TOWER	0/1 63%	RY Tower		0 1 = 53%	
SEQUEN		0/1 53%	0/0 99%	____ Sequen	0 8 99%
BLK DES					____ Blk Des
BLK TAP				____ Blk Tap	
STEREOG	Y Stereog				
FIN LOC	____ Fin Loc				
OBJ MEM				____ Obj Mem	
PUZZLE				YY Puzzle	
FIG-GRD				____ Fig-Grd	
D-A-P					____ D-A-P
CAGE		____ Cage			
VER WRT	____ Ver Wrt	____ Ver Wrt			
HND-NOS	____ Hnd-Nos				
ROMBERG	____ Romberg				
STEPPING	2 Y Stepping				
WKS LNE	____ Wks Lne	____ Wks Lne			
SUP FLX	____ Sup Flx				
KNE-STD	____ Kne-Std				
IMI POS					____ Imi Pos
TNG MVT		____ Tng Mvt			
STAMP	Y Stamp	____ Stamp			
MAZE					Y Maze
GEN INF			Y Gen Inf		
FOL DIR			– Fol Dir		
ARTIC		Y Artic			
SEN REP			Y Sen Rep		
DIG REP			R Dig Rep		

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DOB = 10/1/83
Date enroll = 9/2/86 (C.P.)

DEVELOPMENTAL HIST

PRENATAL HISTORY

Previous pregnancies: number and problems 2

History of pregnancy with this child: use of medication, health of mother, complications or problems

Length of pregnancy: number of weeks, length of labor 26 week gestation [illegible], R.DS, IH, [illegible] [illegible] complications of prematurity

History of pregnancy: type of delivery, complications C-section → 3 mo hospital

EARLY HISTORY

Condition of new-born: Apgar scores, weight, height, problems 1# 12oz [illegible]

Feeding: method, duration, weaning, eating patterns, or problems

Sleep: patterns, problems

Activity level: child's favorite pastimes, reaction to movement

Toilet training: age, method, duration, problems

Medical history: hospitalizations, allergies, ear infections, other problems

Developmental milestones: age at which child completed:

sat alone	4 / yr	crawled	[illegible]	walked	[illegible] 1 yr	ran	
used 1 word	1 yr [illegible]	2-word sentence		3 to-4 word sentence		asked questions	
drank from a cup		dressed self		used spoon		used knife	

describe gross/fine coordination:

describe ability to communicate

Any unusual behaviors or problems: e.g., head banging, temper tantrums, rocking, breath holding, *etc*

PRESENT STATUS good health

Medications currently taken:

Frequency and types of illnesses:

Sleep: good

Toileting:

Eating: good

Activity level: [illegible]

Interaction with other children:

Attendance at preschool or day care: behavior, preacademic performance, socialization, play patterns

Describe coordination:

Describe language:

Note any problems:

Name / address of physician:

Name / address of other specialists treating child:

FAMILY HISTORY	Mother	Father
[illegible]	[illegible]	[illegible]
[illegible]		
[illegible]		
[illegible]		
[illegible]		

History of family since birth of child: moves, changes, significant traumas, problems

Note if any siblings are having or have had problems: [illegible]

Left handed

MILLER ASSESSMENT FOR PRESCHOOLERS
ITEM SCORE SHEET

Child's Name [redacted]
Phone
Parent's Name

[redacted]
DOE 86-12-19
DOB 83-10-7
CA 3-2-12
3 8-28 = 3y 8 mo

II
3'3"
to
3'8"

126

0 5 10 20 30 40 50 60 70 80 90 100

TOWER	[✓ ■]	[✓ 7]	8	9	10	11	12	13	14	-16
SEQ.	[✓ fail] almost -	[✓ pass]								
*BLK DES	■	[✓ only one] almost both	[✓ both]							
*BLK TAP	[✓ neither]	only one	both							
*STEREOG	■	[✓ 3]	[✓ 4]							
*FIN LOC	0	1	[✓ 2]	3	4					
*OBJ MEM	neither	miss fork	[✓ miss ball]	[✓ both]						
*PUZZLE Y.	[✓ neither]	only one	both							
*FIG-GRD	■	-3	4	[✓ 5]	6	[✓ 7]				
D-A-P left tripod grasp.	0	[✓ -2]	[✓ -4]	5	6	7	-9	-37		
*CAGE	[✓ 0]	1	2	[✓ 3]	-5	-13				
*VER WRT	■	20-17	-13	-10	9	-7	[✓ 6]	5	4	[✓ 3]	-1
*HAND-NOS	0	-2	3	[✓ 4]	5	along left hand index finger no pattern 6				
*ROMBERG	0	-9	-14	[✓ 15]						
*STEPG [illegible]	unable	[✓ C-2]	B – 3	[✓ A – 2]	A – 1					
*WKS LNE	■	-21 -7	-17 -5	-13 4	-11 3	10 2	[✓ 8 2]	-7 1	6 0	5 0	-3 0
*SUP FLX	0	1	2	3	-5	-9	-13	[✓ -16]		
KNE-STD	neither	only one	[✓ both]							
*IMI POS	0	1	2	[✓ 3]						
*TNG MVT	■	1	[✓ 2]	[✓ 3]	4					
STAMP	unable	[✓ 20-12]	-10	[✓ -8]	7	6	5			
*MAZE	unable	30-12	-9	-7	6	[✓ 5]	4	3	-1	
*GEN INF	[✓ 0]	1	2	(one) – [✓ 3]						
*FOL DIR	0	1	2	[✓ 3]						
*ARTIC Y	■	[✓ 20]	21	[illegible]	23	24	25			
*SEN REP	0	[✓ 1]	2	[✓ 3]						
*DIG REP	[✓ 0]	-2	3	[✓ 4]	5	6				

Final Score
40% 92%

#reds 1 0
#yellows 4 2

switched to Rt hand

Artic.
mom
bake
dog
good
fun
cat

tap
pony
wait
knife
lady
tickle

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BEHAVIOR DURING TESTING

WNL
[illegible] tests

		1 Severe Dysfunction	2 Moderate Dysfunction	3 4 5 Normal	6 Moderate Dysfunction	7 Severe Dysfunction
ATTENTION	☐ ACTIVITY LEVEL	☐ Frenetic play No pausing	☐ Very active Stops rarely and for short time	☐ ☐ ☐ Pace of play varies Energetic but not over-excited	☐ Lethargic Slow moving Low energy	☐ Immobile Stays in one place
	☐ CONCENTRATION	☐ Shifts rapidly No persistance	☐ Easily diverted by activities of others or extraneous sounds, lights, etc.	☐ ☐ ☐ Changes activity after meaningful exploration or attends to activity until interrupted	☐ Continues own activity even when interrupted	☐ Perseverates Will not change task even when coaxed
	☐ ABILITITY TO STRUCTURE TIME/ COMPLETE TASKS	☐ Can't plan own time Often unable to complete tasks Needs total management	☐ Can complete tasks if helped to organize time and activities	☐ ☐ ☐ Completes most tasks on own initiative Needs minimal aid	☐ Disinterested in completing tasks Needs a push	☐ Oblivious to tasks; will not complete even if prompted
	☐ NEED FOR REWARD/ ABILITY TO DELAY GRATIFICATION	☐ Needs instant, constant gratification Cannot delay reward until task is done	☐ Needs reward quickly to proceed to next task	☐ ☐ ☐ Wants gratification as expected for age Can delay	☐ Somewhat indifferent to reward	☐ Not aware of end product or interested in reward
SOCIAL INTERACTION	☐ REACTION TO SEPARATION FROM CARETAKER	☐ Clings: refuses to go along with examiner Avoids contact with unfamiliar adult	☐ Very resistant to leaving Must be coaxed or promised reward	☐ ☐ ☐ May have a little difficulty but goes with examiner as expected for age	☐ Goes immediately with examiner Little concern about leaving caretaker	☐ Seems unaware of caretaker. No verbal communication with caretaker
	☐ INTERACTION WITH EXAMINER	☐ Requires attention Either hostile and noncompliant or clingy and dependent	☐ Demanding, manipulative Seeks constant physical or verbal attention	☐ ☐ ☐ May be open or shy but interacts without difficulty Accepts limits	☐ Cautious, may look at adult but not initiate contact Submissive Imitates adult exactly	☐ Avoids contact Isolated Withdrawn
	☐ VERBAL INTERACTION	☐ Inappropriate speech or sounds Extremely rapid or incoherent speech	☐ Very talkative Does not listen to others or interact	☐ ☐ ☐ Facility with words Uses to make needs known and communicate with others	☐ Slow to respond Seldom verbalizes Acts out needs by pointing, pulling, crying, etc.	☐ No verbalization
SENSORY REACTIVITY	☐ REACTION TO MOVEMENT	☐ Extremely sensitive to movement, e.g. tends to get nauseated, pale, sweaty particularly with rotation Extremly fearful of moving	☐ Does not like movement Tends to avoid whenever possible	☐ ☐ ☐ Enjoys moving Likes to play, run	☐ Seeks fast movement No dizziness or somatic response Heedless, i.e. lacks caution in movement activities	☐ Does not seem to prepare when falling Moves in same pattern over and over without tiring, e.g. wishes to spin endlessly
	☐ REACTION TO TOUCH	☐ Startles or withdraws from touch; experiences touch as painful ☐ Compulsion to touch people and objects; can't stop even when directed to	☐ Becomes uneasy when touched Avoids touch whenever possible ☐ Overexploratory; often annoys people by touching too much	☐ ☐ ☐ Interested in feeling different textures Likes to be hugged	☐ Slow to respond when touched Doesn't explore toys by handling them	☐ Oblivious to touch or pain Doesn't notice when bumps into things or falls down

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1R ——— 4.

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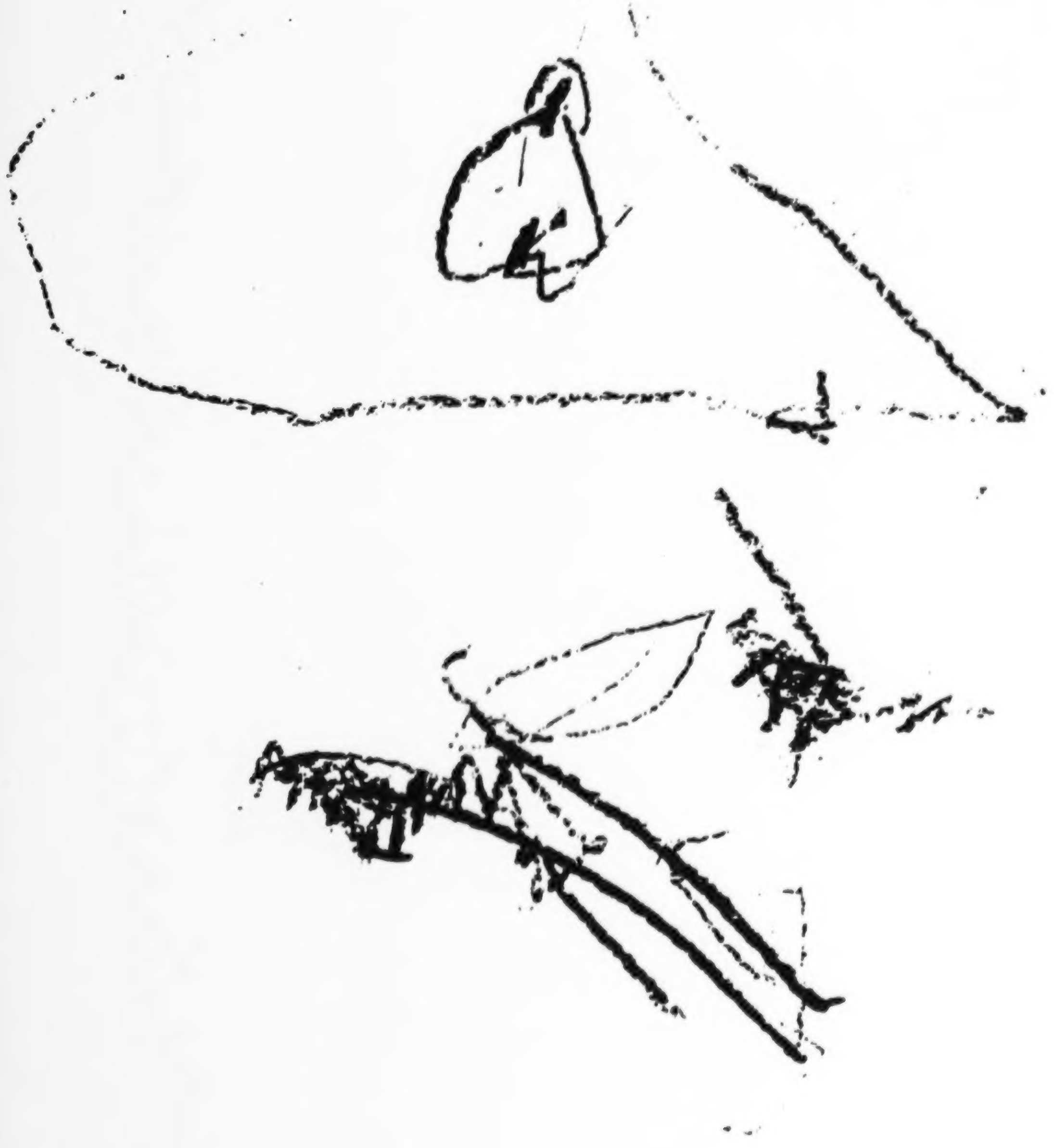
Page 1 128
Draw-A-Person
Time Limit 180"

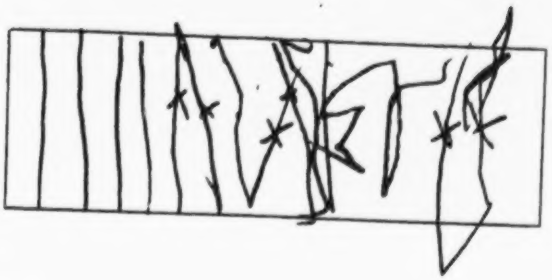
[illegible]

DRAWING BOOKLET

score = 1

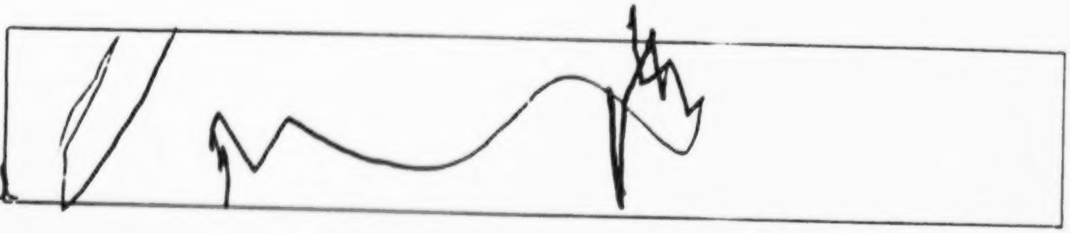


practice
R [✓ L]



③

item
[✓ R L]
switched



Lf grasp more
refined than
right + tighter

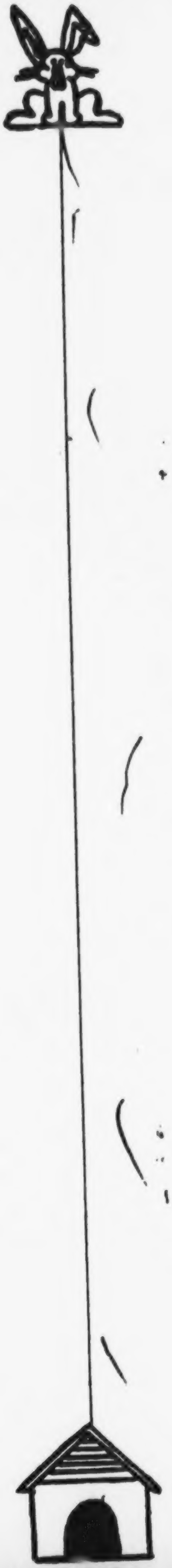
— [illegible]

Page 3
Vertical Writing 130
Practice
R L

N

Page 4
Vertical Writing
Item
R [✓ L]

③



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6/8/81

Page 1
Draw-A-Person 132
Time Limit 180"

DRAWING BOOKLET

~~Name~~ picture of Susan (4 previously switched at midline)

+4

eye +1

head –

head – +2

hair

+1

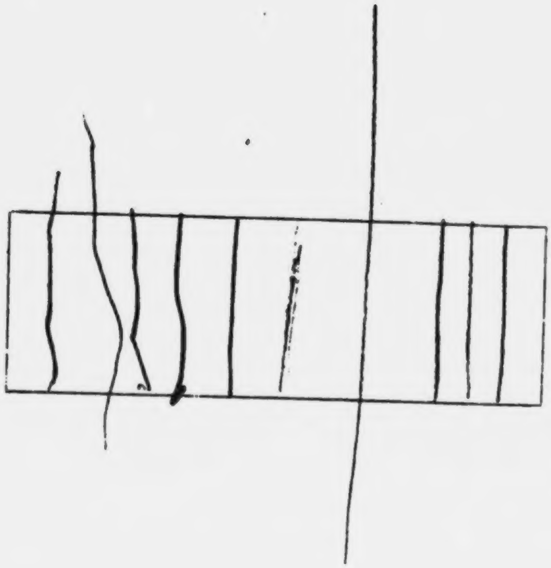
one eye –

6/8/87

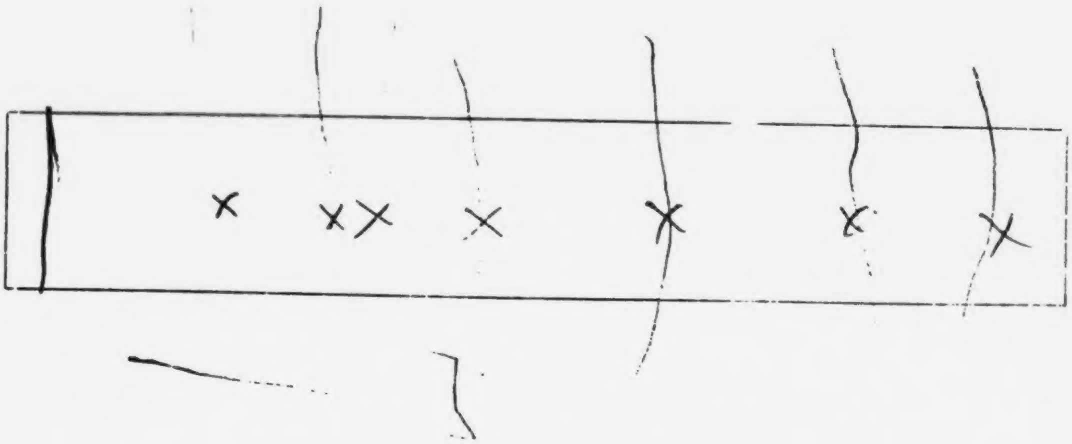
N. ——

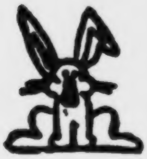
— tone left – tripod
— " rt - palmar

practice
R L



Item
R L

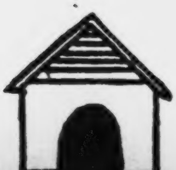




6/8/81

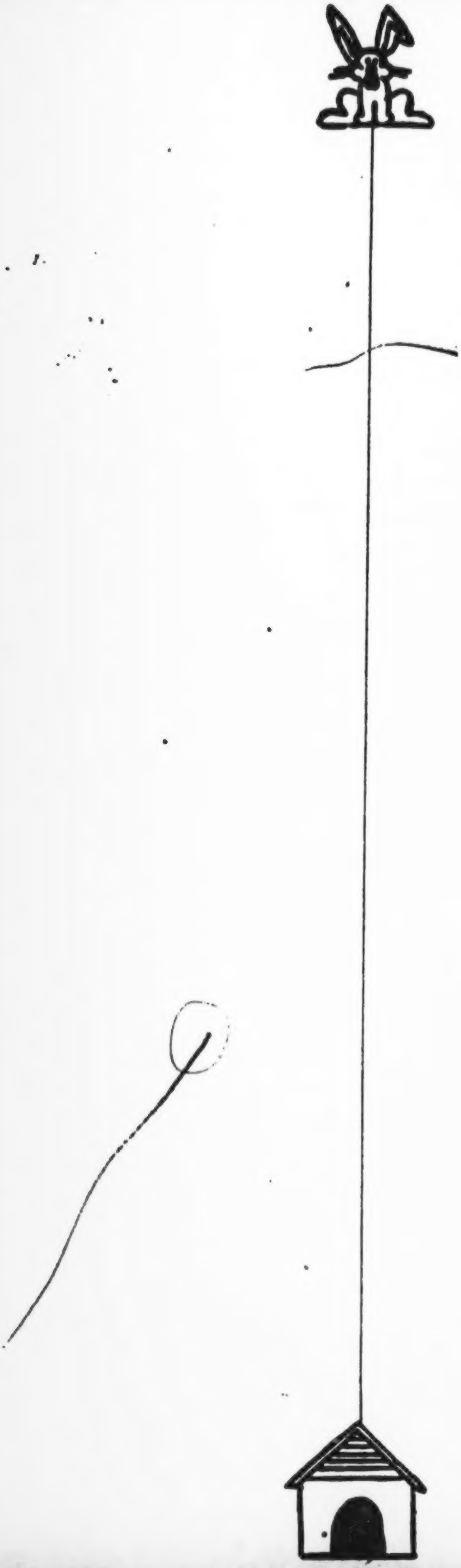
Page 3
Vertical Writing
Practice
[✓ R] L

1.



6/8/87

Page 4
Vertical Writing
Item
[✓ R] L



SUPPLEMEN [illegible] SERVATIONS SHEET

[illegible]

handedness unestablished
tripod L
palmar R
distal weakness
UE & LEs.
puzzles matched edges
not pics

MILLER
ASSESSMENT
FOR
PRESCHOOLERS

Preferred Hand:

VISION

not a prob

[illegible] crossed eyes
[illegible] or watery eyes
[illegible] eye lids
Rubs eyes excessively
Abnormal head posture movement
Squints or frowns when looking at objects
Gets very close to work
Abnormal eye movements i.e., restrictions, nystagmus

TOUCH

[illegible]
Negative verbal reaction [illegible]
Uses fingertips rather than [illegible]
Hands [illegible]
Tendency [illegible] shoes are off

MOVEMENT

Extension/Flexion

[illegible]
[illegible]
[illegible]

Weight Shifting/Rotation

[illegible]
[illegible]
[illegible]
[illegible]

Appearance

[illegible]
[illegible]
[illegible]
[illegible]

Stability

Excessive internal or external rotation at shoulders and/or hips
Arms tend to go into high guard position
Bears weight medially or laterally on feet
Hyperextends knee when walking
Tends to "W" sit

Postural/Movement Patterns

Overflow or associated movements
Falls frequently, clumsy or awkward movements
Movements always initiated to same direction
Frequent postural readjustments in chair
Holds body rigidly, seems unwilling to move quickly
Primitive grasp
Does not automatically assist with alternate hand

DRAW-A-PERSON

[illegible] (1)
[illegible] (2)
[illegible] (3)
[illegible] (4)
[illegible] (5)
[illegible] (6)
[illegible]
Much detail to one part at expense of total picture (8)
Bizarre, disturbing quality (9)
Unenclosed i.e. facial features with no head (10)
Vague overall shape but individual parts hard to distinguish [illegible]
Body parts detailed, [illegible]

SPEECH AND LANGUAGE

Expression

Uses inappropriate vocabulary
Does not use grammatical [illegible] structure
Difficulty "finding" words
Uses many vague or indefinite words or circumlocutions
Tends to respond in simple sentences and short phrases
Voice quality inappropriate for age or sex, i.e. harsh, hoarse, pitch too high or low, volume too soft or loud
Dysfluent, e.g. stutters, repeats words or sounds, prolongs [illegible] tension in body when speaking
Echoes or shadows [illegible] vocally or subvocally
Excessive [illegible] nods, smiles, etc.
Sounds reversed within words
Words reversed within [illegible]

Auditory Ability

Needs directions repeated
Needs volume of directions increased
[illegible]
Wears hearing aid
Difficulty localizing sound, i.e. turning in direction of voice or sounds
Seems to have difficulty discriminating similar sounds, e.g. penny, pencil, gum, [illegible] want, wade

Intelligibility

Difficult to understand
Words run together
Talks too fast to [illegible]
Many articulation [illegible]

Comprehension

[illegible]
Needs directions [illegible]
Difficulty understanding [illegible] expected

BEST COPY AVAILABLE

DATA SHEET

Date: 1/20/87 Name of Student: V[redacted] [redacted]

Name of Therapist/Teacher: Margaret [redacted] / Susan

Physical Play Game(s):

Games
1. motor planning
2. tactile
3. vestibular
4. proprioceptive
5. motor planning

Date	Exercise Games Done Today	Initial When Done	Comments
4/1/87	1. logs, beam, stairs 3.*scooter *barrel roll - inside 2. blowing bubbles 4.*twister game *barrel - prone over 5. logs, beam, stairs	mc	1. completed well c̄ resistance at Ⓡ pelvic to ↑ proper hip ✓ & ↓ hip circumduction. 3.*supine ✓ - kept pulling off the scooter ∴ D/C prone / - better UE / this time *enjoyed rolling in barrel 2. got better at blowing 4.*good c̄ colors, but did not understand maintaining ft. & hand placement - enjoyed! *liked it & showed good push off c̄ feet & hands (back & forth) 5. as above c̄ resistance
4/6/87	1. logs, bal. beam stairs, lg. slide 3*red twister *barrel roll 2. blowing bubbles 4. basketball outdoor swing 5. logs, bal. beam	mc	1. completed well seems used ti new shoes now, no falling 3.* sitting → kneeling → standing (c̄ hands held good rotation * inside. - good rolling - enjoy. 2. did pretty good p̄ he under-stood how hard to blow. 4. enjoyed tried dribbling teaching pumping learned quickly - don't think he understood he was moving himself 5. good

DATA SHEET

Date: 1/20/87 Name of Student: N[redacted] R[redacted]

Name of Therapist/Teacher: Margaret [redacted] / Susan

Physical Play Game(s):

Games
1. motor planning
2. tactile
3. vestibular
4. proprioceptive
5. motor planning

Date	Exercise Games Done Today	Initial When Done	Comments
3/11/87	1. grad logs, beam stairs 2. *blk design *sequencing 3. swing 4. simon says 5. logs, beam stairs memory LT ST	mc	1. stairs ↑↓ x2 2.*chair, hat, bridge, rocket – good robot & house c̄ cues *1-8 & counts good 3. spinning fast 4. in front of mirror faces & tong mvmts., slow stamping c̄ count 5. as before – well names outdoor activities
3/18/87 LT memory: recalled names of all outdoor activities	1. balance beam, logs stairs 2. sand box 3. swing 4. wedge 5. balance beam	mc	1. leads all stepping c̄ Ⓡ leg (fell 1x beam 2. identified all objects, hide the in sand, doesn't appear to like getting hands all way in san 3. spinning 4. ↑↓ x 3, backward ↓ 5. completes well
3/25/87	1. logs, beam, stairs 3. scooter 2. figure ground "MAP" 4. imitation postures 5. logs, beam, stairs	mc	1. completes well usually but n today, new shoes to large fell 3. prone / dragged – ✓@ knees would not extend knees 2. star, lamp & picnic picture completed well → c̄ cues for 50% of [illegible] 4. @mirror 5. as above

DATA SHEET

Date: 1/20/87 Name of Student: [redacted] [redacted]

Name of Therapist/Teacher: Margaret/Susan

Physical Play Game(s): Emphasize especially Foundation aka stereognosis & foot stamping + coordination

Games
1. Motor planning
2. Tactile
3. Vestibular
4. Proprioceptive/Coordination
5. Motor planning

Date	Exercise Games Done Today	Initial When Done	Comments
2/2/87	1. grad. logs, balance beam 2. stereognosis ⑤ items in purse 3. scooter 4. — 5. logs, beam memory task LT ST	MC	1. OK c̄ SB Ⓐ 2. OK 3. pushed off from mirror well c̄ good strength 4. — 5. as above LT (-) on name or objects recall ST nonverbal
2/9/87	1. bal. beam grad. logs 2. stereognosis 3. scooter 4. imitation postures 5. bal. beam + logs memory	MC	1. * unstable esp. @ junctions * c̄ Ⓐ, 2x & fell often 2. recalled objects via feel 3. sitting + prone 4. good 5. better no Ⓐ called me by name
2/23/87	1. grad logs bal. beam 2. * stereognosis * block design 3. swing 4. wedge 5. logs + beam + stairs memory	MC	1. x2 fell once 2. * recalled 3 of 5 items x xx xx x xx xx 3. likes it 4. rolls c̄ ✓ @ hip 5. x1 each no falls recalled items in purse, swing
3/4/87	1. grad logs balance beam 2. stereognosis block design 3. swing 1 scooter 4. imitation postures	MC	1. steps up c̄ rotation @ hip instead of ✓ always leads c̄ one foot + side steps forward c̄ that foot (abd.) instead of [illegible] flexion 2. recall all 5 items except ball, counts well 1-3 pennies. chair, hat, bridge rocket, robot 3 spinning good prone extension 4 good all

Ni[redacted] R[redacted] (Susan)

- (at least) 9 sessions individually + Mousercize focusing on especially (motor) coordination + reflex postural integration activities involving movement.
- posttest 6/8/81 scores well within normal range overall.
- handedness undecided yet eg ① AP tripod Left.
  cage hop game = Right palmar) c̄ pencil vs crayon ??

Needs
- distal weakness apparent - Needs to strengthen
① hands, feet + face mm & FM activities; clay, color, start + stop drawing etc.
② puzzles = pieces (matched edges).
③ on PT schedule (Adams spot ??)

Discussion of birth history; premie 26-7 wks, LBW 1# 12oz
many neonatal complications

Classroom Observation = Informal

4RC's - Held every M & Th at 11:00-12:00 AM at least to observe informally, and without being observed by target children: 11:00 - play ground activities = motor planning foundations; socialization, especially

11:30 - cafteria = motor planning & timing etc. - FM - eating skills [illegible] - focusing on activity + [illegible] out [illegible]

- Held on Fri afternoons from 1:00-2:30 PM in PT Dept as target children partic (c̄ others) in Monsercize sessions = attending skills imitation of posture = coor motor plan, balance & tactile processing [illegible]

- 5/21/81 Observed continuation of program of SI intervention in sm groups — everyone after implementation

ASC = Every other week Wed AM observations:

10-10:30 Good Morning Activities = FM, attending, tactile etc

10:00-11:30 Gross Motor Period - GM coor, motor planning foundations

11:30-12:00 Feeding - FM eating skills, handedness motor planning & attending